

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF RHODE ISLAND

_____)	
Conservation Law Foundation, Inc.,)	
)	C.A. No. _____
Plaintiff,)	
)	COMPLAINT and JURY DEMAND
v.)	
)	
Shell Oil Products US,)	
Shell Oil Company,)	
Shell Petroleum, Inc.,)	
Shell Trading (US) Company,)	
Royal Dutch Shell plc, and)	
Motiva Enterprises LLC,)	
)	
Defendants.)	
_____)	

**CONSERVATION LAW FOUNDATION’S COMPLAINT FOR DECLARATORY AND
INJUNCTIVE RELIEF AND CIVIL PENALTIES**

Plaintiff Conservation Law Foundation, Inc. (“CLF”), by and through its counsel, hereby alleges:

INTRODUCTION

1. This is a civil suit brought under the citizen suit enforcement provisions of the Federal Water Pollution Control Act, 33 U.S.C. §§ 1251, *et seq.* (“Clean Water Act” or “CWA”). Plaintiff CLF seeks declaratory and injunctive relief, civil penalties, and other relief the Court deems proper to remedy Defendants’ Shell Oil Products US, Shell Oil Company, Shell Petroleum, Inc., Shell Trading (US) Company, Royal Dutch Shell plc, and Motiva Enterprises LLC (hereinafter, collectively, “Defendants” or “Shell”) violations of federal law, which include Shell’s past and ongoing failures to comply with Rhode Island Pollutant Discharge Elimination System (“RIPDES”) Permit No. RI0001481, issued February 14, 2011 and effective April 1, 2011 (expired April 1, 2016 and administratively continued) (“the Permit”) and the Clean Water Act.

2. These violations of federal law have occurred and are occurring at Shell's Providence Terminal, formerly the Motiva Enterprises LLC Providence Terminal, a bulk storage and fuel terminal located at 520 Allens Avenue in Providence, Rhode Island (hereinafter "Providence Terminal").

JURISDICTION AND VENUE

3. CLF brings this civil suit under the citizen suit enforcement provisions of Section 505 of the Clean Water Act, 33 U.S.C. § 1365. This Court has subject matter jurisdiction over the parties and this action pursuant to that statute and 28 U.S.C. § 1331 (providing district courts with original jurisdiction over an action arising under the Constitution and laws of the United States).

4. Venue is proper in the U.S. District Court for the District of Rhode Island pursuant to Section 505(c)(1) of the CWA, 33 U.S.C. § 1365(c)(1), because the source of the violations is located within this judicial district.

5. On June 28, 2017, CLF notified Shell of its intention to file suit for violations of the Clean Water Act, in compliance with the statutory notice requirements set forth in 33 U.S.C. § 1365(a)(1), and the corresponding regulations at 40 C.F.R. § 135.2. Letter to Shell, from A. Moses, Vice President and Director, CLF Rhode Island (June 28, 2017) (hereinafter, "CLF's Notice Letter"). A true and accurate copy of CLF's Notice Letter (without attachments) is appended hereto as Exhibit A.

6. More than sixty days have elapsed since CLF's Notice Letter was served on Shell, during which time neither the Environmental Protection Agency ("EPA") nor the Rhode Island Department of Environmental Management ("DEM") has commenced and diligently prosecuted a court action to redress the Clean Water Act violations alleged in this complaint. *See* 33 U.S.C. § 1365(b)(1)(B).

7. Further, neither EPA nor DEM have taken administrative action to redress the Clean Water Act violations alleged in this complaint.

PARTIES

Plaintiff

8. Plaintiff CLF is a 501(c)(3) nonprofit, member-supported organization dedicated to the conservation and protection of New England's public health, environment, and natural resources. It is incorporated under the laws of Massachusetts with its principal place of business at 62 Summer Street, Boston, MA 02110. CLF operates in Rhode Island at 235 Promenade Street, Suite 560, Providence, RI 02908. CLF has over 4,600 members, including over 200 members in Rhode Island. CLF has long worked to protect the health of New England's waterways, including addressing the significant water quality impacts of industrial and stormwater pollution.

9. CLF members live near, recreate on, and regularly visit the road and waters near Shell's Providence Terminal, including, but not limited to, the Providence River, the Providence Harbor, and Narragansett Bay. CLF members use and enjoy these waters for recreational and aesthetic purposes, including, but not limited to, boating, swimming, fishing, observing wildlife, and sightseeing, and intend to continue to engage in these activities in the future.

10. CLF and its members are harmed and threatened by Shell's acts and omissions at the Providence Terminal and its violations of environmental laws and regulations.

11. CLF and its members are directly and indirectly exposed to or otherwise harmed by, and have an interest in preventing, Shell's pollutant discharges from the Providence Terminal. Among other pollutants, these discharges contain toxic pollutants known to be harmful to humans and aquatic life, to persist in the environment, to bioaccumulate in fish and shellfish, and to cause harm to water quality and living marine resources. These discharges of pollutants, including toxic

pollutants, result from Shell's on-going activities at the Providence Terminal and its failure to comply with the Permit.

12. CLF and its members are concerned that Shell's pollutant discharges, including toxic pollutant discharges, harm the ecosystem and human use and enjoyment of the Providence River, the Providence Harbor, and Narragansett Bay. CLF and its members are also deeply concerned about health impacts resulting from exposure to pollutants from the Providence Terminal when they are present in the surrounding environment. For these reasons, Shell's violations have diminished and continue to diminish CLF's members' use and enjoyment of the environment surrounding the Providence Terminal. CLF seeks, on behalf of its members, to prevent and remedy these ongoing injuries, compel compliance with the Permit, and seek restoration of affected marine resources with this action.

13. CLF and its members are also concerned about, and have an interest in eliminating the risk from, the pollutants from the Providence Terminal that will wash into the Providence River, the Providence Harbor, and Narragansett Bay, as well as into nearby communities and ecosystems, when the Providence Terminal is flooded by increased and/or more intense precipitation, increased magnitude and frequency of storm events, increased magnitude and frequency of storm surge, and/or sea level rise.

14. Shell has not taken sea level rise, increased and/or more intense precipitation, increased magnitude and frequency of storm events, and increased magnitude and frequency of storm surges—all of which will become, and are becoming, worse as a result of climate change—into account in its Clean Water Act-required and enforceable stormwater pollution prevention plan ("SWPPP").

15. Shell has knowledge of, and has validated, the scientific certainty that these impacts are occurring or will occur.

16. As a result of Shell's failure to account for these impacts, CLF and its members are placed directly in harm's way and have no assurance that they will be protected from pollutants released and discharged from the Providence Terminal as a result of these impacts.

Defendants

17. Defendant Shell Oil Products US was founded in 1995 and is headquartered in Houston, Texas. Shell Oil Products US is a wholly-owned subsidiary of Royal Dutch Shell plc that markets and distributes crude oil and petroleum products.

18. Defendant Shell Oil Company, founded in 1912 when the Royal Dutch/Shell Group founded the American Gasoline Company, is headquartered in Houston, Texas. Shell Oil Company is a wholly-owned subsidiary of Royal Dutch Shell plc that produces oil and gas in deepwater in the Gulf of Mexico, heavy oil in California, and oil and gas from shale in Pennsylvania.

19. Defendant Shell Petroleum, Inc. was founded in 1984 and is headquartered in Houston, Texas. Shell Petroleum, Inc. is a wholly-owned subsidiary of Royal Dutch Shell plc that produces, refines, and markets petroleum products and chemicals.

20. Defendant Shell Trading (US) Company became operational in 1998 and is headquartered in Houston, Texas. Shell Trading (US) Company is a wholly-owned subsidiary of Royal Dutch Shell plc and is one of the world's largest energy trading companies, operating as the market interface of Royal Dutch Shell's US companies and affiliates.

21. Defendant Royal Dutch Shell plc is the parent company of the Shell group, a multinational oil and gas corporation incorporated in England and Wales and headquartered in The Hague, The

Netherlands. The Royal Dutch Shell Group formed in 1907 upon the merger of the Royal Dutch Petroleum Company and the Shell Transport and Trading Company.

22. Defendant Motiva Enterprises LLC, a wholly-owned affiliate of Saudi Aramco, is a fuel refining, distribution, production, and marketing company headquartered in Houston, Texas. Motiva Enterprises LLC formerly operated the Providence Terminal. Motiva Enterprises LLC was a joint venture between Royal Dutch Shell plc and Saudi Aramco (through its subsidiary Saudi Refining, Inc.). Shell formally announced the completion of the dissolution of Motiva Enterprises LLC on May 1, 2017. *See* Shell Global, Shell Announces the Completion of Transaction to Separate Motiva Assets (May 1, 2017), <http://www.shell.com/media/news-and-media-releases/2017/completion-transaction-to-separate-motiva-assets.html>. Per the dissolution agreement, Shell maintained control over the Northeastern region of the U.S., including ownership of the Providence Terminal. *Id.* References to Shell herein include any predecessors, successors, parents, subsidiaries, affiliates, and divisions of Shell, including Motiva Enterprises LLC.

23. Upon information and belief, Shell is the world's seventh largest company by 2016 revenues and the second largest oil and gas company. Shell Oil Company, Royal Dutch Shell plc's largest business, held the highest 2016 market value on the London Stock Exchange, with a market cap of 193 billion pounds (£).

24. Shell is a large producer, refiner, distributor, and marketer of petrochemicals. Upon information and belief, Shell produces approximately 3.7 million barrels of oil equivalent ("BOE") every day.

25. Upon information and belief, Shell's "proved reserves" (the amount of oil and gas that Shell could presently extract based on current technology and capabilities) as of December 31, 2016, are approximately 13.248 billion BOE, a 2.877 billion BOE increase (before production)

from the year before. With interests in twenty-two oil refineries and operations in over 70 countries, Shell has a combined daily refining capacity of 2.9 million barrels.

26. Upon information and belief, Shell Oil Products US operates the Providence Terminal and holds the Permit for the Providence Terminal.

STATUTORY AND REGULATORY BACKGROUND

Clean Water Act

27. Congress enacted the Clean Water Act to “restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” 33 U.S.C. § 1251(a). To accomplish that objective, Congress set as a “national goal that the discharge of pollutants into the navigable waters be eliminated [].” *Id.*

28. Accordingly, Section 301(a) of the Clean Water Act, 33 U.S.C. § 1311(a), prohibits the discharge of any pollutant into waters of the United States from a point source, unless the discharge complies with various enumerated sections of the Act.

29. Among other things, Section 301(a) prohibits discharges not authorized by, or in violation of, the terms of a valid National Pollutant Discharge Elimination System (“NPDES”) permit issued pursuant to Section 402(p) of the CWA, 33 U.S.C. § 1342(p).

30. Section 502(14) of the Clean Water Act defines “point source” to include “any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged.” 33 U.S.C. § 1362(14).

31. Under the regulations implementing the Clean Water Act, the definition of “discharge of a pollutant” includes “additions of pollutants into waters of the United States from: surface runoff which is collected or channelled by man.” 40 C.F.R. § 122.2.

32. Dischargers of pollutants, including industrial wastewater, process water, and stormwater associated with industrial activity, must obtain and comply with the requirements of NPDES permits issued under Section 402 of the Clean Water Act, 33 U.S.C. § 1342.

33. NPDES permits contain pollutant sampling and monitoring requirements and limits on the amount or concentration of allowable pollutants, in addition to requirements regarding control measures, best management practices, and recordkeeping and reporting.

34. The discharge of any pollutant in violation of a NPDES permit, the failure to conduct required monitoring for pollutant discharges, and the failure to comply with other requirements of a NPDES permit are all violations of the Clean Water Act, 33 U.S.C. §§ 1311(a), 1342.

35. In Rhode Island, the Director of DEM has been delegated authority to implement the NPDES permit program, R.I. Gen. Laws § 46-12-3, which in Rhode Island is called the Rhode Island Pollutant Discharge Elimination System, or “RIPDES.”

36. Section 505(a)(1) of the Clean Water Act, 33 U.S.C. § 1365(a)(1), provides for citizen enforcement actions against “any person . . . who is alleged to be in violation of [] an “effluent standard or limitation . . . or [] an order issued by the [EPA] Administrator or a State with respect to such a standard or limitation.”

37. Such enforcement action under Section 505(a) of the Clean Water Act includes an action seeking remedies for unauthorized discharges in violation of Section 301 of the Clean Water Act, 33 U.S.C § 1311, as well as for failing to comply with one or more permit conditions in violation of Sections 402 and 505(f) of the Act, 33 U.S.C. §§ 1342, 1365(f). Each separate violation of the

Clean Water Act subjects the violator to a penalty of up to \$37,500 per day per violation for all violations occurring between January 12, 2009 and November 2, 2015; up to \$51,570 per day per violation for all violations occurring after November 2, 2015 and assessed on or after August 1, 2016 but before January 15, 2017; and up to \$52,414 per day per violation for all violations occurring after November 2, 2015 and assessed on or after January 15, 2017. *See* 33 U.S.C. §§ 1319(d), 1365(a); 40 C.F.R. §§ 19.1–19.4.

FACTUAL BACKGROUND

Shell's Providence Terminal

38. Defendants, acting through officers, managers, subsidiary companies, and instrumentalities, own or have owned and/or operate or have operated the Providence Terminal.

39. The Providence Terminal is a bulk storage and fuel terminal that has operated since 1907. It previously operated as a lubrication oil blending facility, an asphalt production facility, and a petroleum distribution facility.

40. Upon information and belief, the Providence Terminal is comprised of approximately 75 acres of land.

41. The Providence Terminal consists of “tank farms” (the West Side Tank Farm and East Side Tank Farm), an ethanol railcar terminal, a marine terminal, buildings, and infrastructure. The West and East Side Tank Farms refer to the tanks located on the west and east sides of Allens Avenue, respectively.

42. The Providence Terminal is engaged in the receipt, storage, and distribution of petroleum products. The spectrum of fuels handled by the Providence Terminal consists of motor gasoline, fuel grade ethanol, fuel oil, jet fuel, fuel additives, and diesel. The Providence Terminal contains twenty-five refined petroleum product storage tanks, six of which are utilized for ethanol storage.

43. The Providence Terminal processes both neat ethanol and fuel ethanol, and receives and processes off-spec gasoline, gasoline blending stock, and dimate (hexane) to produce saleable gasoline. Fuel products are received at the marine transfer area of the Providence Terminal via ships and barges and shipped from the Providence Terminal via trucks or barges. The ethanol is transferred into ethanol railcars and transported off the site.

44. The Providence Terminal generates, stores, handles, and disposes of (and has throughout the term of Motiva's and Shell's ownership and control) toxic and hazardous chemicals, metals, and compounds, including, but not limited to: Benzene, Ethanol, Ethylbenzene, Iron, Methyl Tertiary Butyl Ether (MTBE), NAPL, SGT-HEM (Oil and Grease), Petroleum Hydrocarbons, Pyrene, Total Suspended Solids, Xylenes (m,p,o), and the following Polycyclic Aromatic Hydrocarbons (PAHs):¹ Acenaphthene, Acenaphthylene, Anthracene, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(ghi)perylene, Benzo(k)fluoranthene, Chrysene, Dibenzo(a,h)anthracene, Fluoranthene, Fluorene, Indeno(1,2,3-cd)pyrene, Naphthalene, Phenanthrene, and Pyrene.

45. The Providence Terminal's marine transfer area is comprised of two mooring areas and two product transfer areas. The Providence Terminal is equipped to dock two vessels simultaneously. Product is transferred via the dock or via a ten-bay truck rack.

46. The Providence Terminal operates 24 hours per day, 7 days per week.

47. Defendants are, and/or have been, responsible for the operation and maintenance of the Providence Terminal, including compliance with the Permit.

¹ Referred to as "Polynuclear" Aromatic Hydrocarbons (PAHs) in the Permit. Permit Part I.A.1, at 2. Polynuclear is synonymous with Polycyclic.

48. The Providence Terminal will be inundated, in whole or in part, by storm surge associated with a Category 1, 2, 3, or 4 storm event.

49. The Providence Terminal is depicted as inundated, in whole or in part, by storm surge associated with Category 1, 2, 3, or 4 storm events in readily available model outcomes from state and federal agencies responsible for assessing storm risk in coastal areas as follows:



Hurricane Surge
Inundation Areas (Worst
Case) for Providence
County



See University of Rhode Island Environmental Data Center (“URIEDC”), Rhode Island Geographic Information System (“RIGIS”), *Hurricane Surge Inundation Areas (Worst Case)*, <http://www.arcgis.com/home/webmap/viewer.html?useExisting=1&layers=43169083ba5f4566ae38be9223450a3d> (last visited Aug. 15, 2017).

50. The majority of the Providence Terminal East Side Tank Farm is included within a “Category 1” and “Category 2” Hurricane Surge Inundation Zone, nearly the entire Providence Terminal is included within the “Category 3” Hurricane Surge Inundation Zone, and the entire Providence Terminal is included within the “Category 4” Hurricane Surge Inundation Zone.

51. In addition to the certainty of inundation from storm surge, the Providence Terminal is now and will continue to be regularly subject to the more than seventy percent increase in intense rains experienced throughout the Northeastern United States, including in Providence, as a result of climate change. *See infra*, ¶ 142(d). These rains more likely than not overwhelm the Providence Terminal’s stormwater management system, and increase illicit discharges from the Providence Terminal’s operations.

Discharges to the Providence River and Shell’s Permit

52. The Providence Terminal is located on the shore of the Providence River, in the Providence Harbor, at the head of Narragansett Bay.

53. Narragansett Bay is New England’s largest estuary, comprised of nearly 147 square miles, serving as a critical habitat for thousands of species, and a backyard to approximately 887,863 Rhode Island residents. *See Save the Bay, Facts and Figures About Narragansett Bay* (2017), <http://www.savebay.org/bayfacts> (last visited Aug. 17, 2017). The Bay attracts an estimated 100,000 fishermen and twelve million tourists annually. *See Save the Bay, Discover Your Bay*, <http://www.savebay.org/discover> (last visited Aug. 17, 2017).

54. As of 2015, the Rhode Island commercial (including imports) and recreational fishing industries provide for 4,831 jobs and 3,354 jobs respectively. *See* NOAA, *Fisheries Economics in the United States 2015*, at 94, 75 (May 2017) http://www.st.nmfs.noaa.gov/Assets/economics/publications/FEUS/FEUS-2015/Report-Chapters/FEUS%202015-AllChapters_Final.pdf. In 2015, commercial fishing contributed approximately \$167 million to Rhode Island's economy, and recreational fishing contributed approximately \$217 million. *Id.* at 8, 11.

55. Narragansett Bay contributes \$100 million annually to the local recreational fishing economy and supports tens of thousands of tourism related jobs. *See* EPA Office of Research and Development and New England Regional Office, *Striving for Balance in the Narragansett Bay Watershed: EPA's Triple Value Simulation (3VS) Model* (Jan. 2013), <https://www.epa.gov/sites/production/files/2013-12/documents/3vs-tool-nutrient-mgt-narr-bay.pdf>. According to DEM, Narragansett Bay's "annual contribution to Rhode Island's economy totals billions of dollars," and "[i]ts environmental and aesthetic value is priceless." DEM, *Introduction to Narragansett Bay* (2017), <http://www.dem.ri.gov/programs/emergencyresponse/bart/nbay.php>.

56. The health of Narragansett Bay has steadily improved over the last decade due in part to a largescale Combined Sewer Overflow ("CSO") project undertaken by the Narragansett Bay Commission ("NBC"). *See* NBC, *Evaluation of CSO Phase I Project: Water Quality Outcomes* (Apr. 21, 2016), <http://snapshot.narrabay.com/app/Services/MossFile.ashx?file=/s/emda/snapshot/Documents/Narragansett%20Bay%20Commission%20CSO%20Phase%20I%20Report.pdf>. The NBC reports that as of 2014, the project had prevented the discharge of 6.15 billion gallons of sewage from

entering Narragansett Bay and led to a 50% reduction in fecal coliform bacteria load annually. *Id.* at 1.

57. According to DEM Director Janet Coit, stormwater pollution still remains a challenge for the region. In a 2015 article, she stated, “[i]t’s going to require a lot of small actions,” and, “[w]e can’t deal with stormwater with just big tunnels.” Frank Carini, *Urban Runoff Fouls Economic Opportunities*, ECORI (Nov. 4, 2015), <https://www.ecori.org/pollution-contamination/2015/11/4/urban-runoff-fouls-swimming-and-fishing-opportunities>.

58. The 2015 Watershed Counts report, produced by the URI Coastal Institute, the Narragansett Bay Estuary Program, and EPA, highlighted the negative impacts of stormwater runoff caused by the urbanization of the watershed. *See* Watershed Counts, *Cities by the Bay* (2015), http://watershedcounts.org/documents/Watershed_Counts_Report_2015.pdf. Over one thousand people live per square mile along Narragansett Bay, resulting in 56% of the watershed being classified as urban. *Id.* at 7. The report cautions that urban ports are currently one of the sources of “pollution and degradation of our urban waters; innovative solutions are needed to reduce their impact.” *Id.* at 5. The report further highlights that urban ports are threatened by rising seas and coastal storms, and are responding accordingly:

[p]orts around the world are starting to plan in new ways to be more resilient in the face of climate change. This ranges from updating emergency response and land use plans to discussing how vulnerable structures can be moved to a safer place within ports or perhaps even moved to a remote location in the surrounding community . . . ports need to look to the future to avoid drowning in place.

Id. at 20.

59. Shell operates the Providence Terminal pursuant to an individual permit issued by DEM under the RIPDES permit program, R.I. Gen. Laws Chapters 46-12, 42-17.1, and 42-35. Shell operates subject to Permit No. RI0001481, which was issued on February 14, 2011 and became effective on April 1, 2011. The Permit expired on April 1, 2016 and has been administratively continued.

60. The Permit authorizes Shell, subject to certain conditions, to discharge stormwater runoff, groundwater, holding pond drainage, hydrostatic/hydraulic test water, and treated tank bottom draw-off water.

61. The receiving water identified in the Permit is the Providence River (Narragansett Basin/Providence River Subbasin/Waterbody ID Number RI0007020E-01B), a tidal river that flows through the communities of Providence, East Providence, Cranston, Warwick, and Barrington on its way to Narragansett Bay.

62. The upper half of the Providence River, where the Providence Terminal is located, is a Class SB1{a} waterbody “designated for primary and secondary contact recreational activities and fish and wildlife habitat. They shall be suitable for aquacultural uses, navigation, and industrial cooling. These waters shall have good aesthetic value.” R.I. Code R. 25-16-25:8(B)(2)(c).

63. The *State of Rhode Island 2014 303(d) List, List of Impaired Waters FINAL* identifies the upper Providence River (Waterbody ID Number RI0007020E-01B) as one of the waterways within Rhode Island that is impaired. DEM Office of Water Resources, *2014 303(d) List of Impaired Waters FINAL* (2015), <http://www.dem.ri.gov/pubs/303d/303d14.pdf>.

64. The Permit includes conditions and limitations controlling Shell’s discharges at the Providence Terminal.

65. The Permit authorizes discharges from the Providence Terminal through three stormwater discharge outfalls to the Providence River: Outfalls 001A, 002A, and 003A. The Permit includes conditions that specify the required operation of the stormwater system, including specific conditions, limitations, and monitoring and reporting requirements governing the discharge from each outfall.

66. Stormwater and groundwater accumulated in the West Side Tank Farm is collected by drainage swales, pipes, and pumps and directed to a collection/retention pond and pumped through an eight-inch pipeline to an oil/water separator prior to discharge to the Providence River through Outfall 001A.

67. Stormwater accumulated in the East Side Tank Farm is collected by drains and pipes, directed to an oil/water separator and a holding pond, and then discharged to the Providence River through Outfall 002A.

68. The stormwater accumulated from the paved parking area in the northwest corner of the East Side Tank Farm is collected in catch basins, directed through underground piping to an oil/water separator, and then discharged through Outfall 003A to the Providence River.

69. Though not authorized by the Permit, stormwater accumulated from an area of the Providence Terminal on the west side of Allens Avenue is collected in catch basins, directed through underground piping to a connection with the City of Providence stormwater drainage system, and then, based on information and belief, discharged through a stormwater pipe under the east side of the Providence Terminal to the City of Providence stormwater outfall into the Providence River.

70. Though not authorized by the Permit, runoff flows down an embankment located on the Providence Terminal property directly into the Providence River. *See* Exhibit B.

Stormwater Pollution Prevention Plan

71. Shell is required to have a stormwater pollution prevention plan in place at the Providence Terminal:

A Storm Water Pollution Prevention Plan (SWPPP) shall be maintained and implemented by the permittee. The SWPPP shall be prepared in accordance with good engineering practices and identify potential sources of pollutants, which may reasonably be expected to affect the quality of storm water discharges associated with industrial activity from the facility.

Permit Part I.C.1, at 12.

72. The Permit requires that: “[i]n addition, the SWPPP shall describe and ensure the implementation of Best Management Practices (BMPs) which are to be used to reduce or eliminate the pollutants in storm water discharges associated with industrial activity at the facility and to assure compliance with the terms and conditions of this permit.” Permit Part I.C.1, at 12.

73. Shell has failed to consider and address the risks of sea level rise, increased and/or more intense precipitation, increased magnitude and frequency of storm events, and increased magnitude and frequency of storm surges—all of which will become, and are becoming, worse as a result of climate change—in its SWPPP, as more fully set forth below.

74. The SWPPP states that “[t]he oil/water separators are is [sic] inspected quarterly for both sludge layer and oil layer and cleaned-out as appropriate” and that “[t]he storm water collection ponds are also inspected quarterly for excessive sediment build-up or evidence of erosion, and corrective action taken as needed.” SWPPP, at 4-4.

75. The separator and ponds are routinely dirty, and show no signs of regular cleaning or maintenance. Examples of this are attached at Exhibits B and C (the content of Exhibit C was attached to CLF’s Notice Letter as Appendix A).

Monitoring and Reporting

76. The Permit contains “monitor and report” requirements for numerous pollutant parameters for Outfalls 001A and 002A. *See* Permit Part I.A, at 2-4.

77. The Permit requires Shell to “assure that all wastewater testing required by this permit, is performed in conformance with the method detection limits listed below” Permit Part I.D, at 17.

78. The relevant method detection limits (“MDLs”) specified in the Permit are:

Benzene	1.0 ug/l
Toluene	1.0 ug/l
Ethylbenzene	1.0 ug/l
Total Xylenes	0.5 ug/l
Acenaphthene	1.0 ug/l
Acenaphthylene	1.0 ug/l
Anthracene	1.0 ug/l
Benzo(a)anthracene	0.013 ug/l
Benzo(a)pyrene	0.023 ug/l
Benzo(b)fluoranthene ²	0.018 ug/l
Benzo(ghi)perylene	2.0 ug/l
Benzo(k)fluoranthene	0.017 ug/l
Chrysene	0.15 ug/l
Dibenzo(a,h)anthracene	0.03 ug/l
Fluoranthene	1.0 ug/l
Fluorene	1.0 ug/l
Indeno(1,2,3-cd)pyrene	0.043 ug/l
Naphthalene	1.0 ug/l
Phenanthrene	1.0 ug/l
Pyrene	1.0 ug/l

Permit Part I.D, at 18, 19.

79. The Permit also states that “all sample results shall be reported as: an actual value, ‘could not be analyzed,’ less than the reagent water MDL, or less than an effluent or sludge specific MDL.” Permit Part I.D, at 17.

² Referred to in the MDL table on page 18 as “3,4-benzofluoranthene.”

80. As summarized in Exhibit D (the content of Exhibit D was attached to CLF's Notice Letter as Appendix B), Shell has often reported on its DMRs that the concentration of pollutants in the samples analyzed was "<1" ug/L. Reporting "<1" ug/L indicates that the MDL Shell is using for the pollutants is one ug/L, and the amount of pollutant in the analyzed samples was below the detection limit of one ug/L.

81. The MDL expressly required in the Permit for total xylenes, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene is not "one" ug/L; it is 0.5, 0.013, 0.023, 0.018, 0.017, 0.15, 0.03, and 0.043, ug/L respectively—all values below one. For these pollutant parameters, reporting "<1" ug/L is a violation of the Permit.

82. The Permit requires the following regarding sampling for "oil and grease" and "TSS:"

Two (2) samples shall be taken during wet weather and one (1) during dry weather. Wet weather samples must be collected during the first 30 minutes from discharges resulting from a storm event that is greater than 0.1 inch of rainfall in a 24-hour period and at least 72 hours from the previously measurable (greater than 0.1 inch of rainfall in a 24-hour period) storm event. If this is not feasible, wet weather samples may be taken within the first hour of discharge and noted on the Discharge Monitoring Report.

Permit Part I.A.1 n. 1, at 4.

83. As summarized in Exhibit E (the content of Exhibit E was attached to CLF's Notice Letter as Appendix C, Table 1), the DMRs for the Providence Terminal regularly indicate that samples were not taken in compliance with this Permit requirement.

84. For monitored pollutants other than "oil and grease" and "TSS", the Permit requires that:

One sample shall be taken during the first 30 minutes of discharge from a storm event that is greater than 0.1 inch of rainfall in a 24-hour period and at least 72 hours from the previously measurable (greater than 0.1 inch of rainfall in a 24-hour period) storm event; if this is not feasible, it may be taken within the first hour of discharge and noted on the Discharge Monitoring Report.

Permit Part I.A.1 n. 2, at 4.

85. As summarized in Exhibit F (the content of Exhibit F was attached to CLF's Notice Letter as Appendix C, Table 2), the DMRs for the Providence Terminal regularly indicate that samples were not taken in compliance with this Permit requirement.

86. For all pollutant monitoring, Shell is required to document specific storm characteristics on the DMRs. Specifically, the Permit requires that:

In addition to the required sampling results submitted in accordance with Parts I.A.1. and I.A.3. of this permit, the permittee must provide the date and duration (hours) of the storm event sampled, the total depth of rainfall (inches), and the total volume of runoff (Ft³). This information must be submitted with the Discharge Monitoring Report forms at the frequency specified in Part I.E.2 of this permit.

Permit Part I.A.4.d, at 8.

87. As summarized in Exhibit G (the content of Exhibit G was attached to CLF's Notice Letter as Appendix C, Table 3), the DMRs for the Providence Terminal indicate that the information required under this Permit provision was not recorded and/or provided.

88. For all pollutant monitoring, if adverse climatic conditions prevent samples from being collected in a given period, Shell is required to submit an explanation as to why, and may only exercise this waiver once in a two-year period. Specifically, the Permit requires that:

If the permittee is unable to collect samples due to adverse climatic conditions which make the collections of samples dangerous or impractical, the permittee must submit, in lieu of sampling data, a description of why samples could not be collected, including available precipitation data for the monitoring period. The permittee can only exercise this waiver once in a two (2) year period for outfalls designated 001A, 002A, and 003A.

Permit Part I.4.e, at 8.

89. As summarized in Exhibit H (the content of Exhibit H was attached to CLF's Notice Letter as Appendix C, Table 4), the DMRs for the Providence Terminal indicate that Shell is over-utilizing this waiver requirement, in violation of the Permit's prohibition on using the waiver more than once in a two-year period.

90. The Permit includes a condition entitled "Recordkeeping and Internal Reporting Procedures" that states:

Incidents such as spills, or other discharges, along with *other information describing the quality and quantity of storm water discharges* must be included in the records. All inspections and maintenance activities must be documented and maintained on site for at least five (5) years.

Permit Part I.C.5.b.11, at 16 (emphasis added).

91. Because all discharges through Outfall 001A and some discharges through Outfall 002A are pump controlled, *see* Statement of Basis IV, at 3, Shell must take samples at those locations within the first 30 minutes of discharge associated with pumping and keep records of all pump operations to be in compliance with the Permit, *see* Permit Part I.A.1 n. 1, 2, at 4.

92. The DMRs do not indicate that monitoring is occurring during pumped discharges at all, let alone during the first 30 minutes after the pumps are activated.

93. Shell's failure to comply with the sampling requirements in its Permit distorts the sampling results it does report.

94. To be effective, stormwater monitoring must be conducted when the runoff first begins, as this is when the highest concentration of pollutants washes off of the facility and into the Providence River. It is during this time that Shell must demonstrate compliance with the terms and conditions of its Permit that have been imposed to limit the amount of pollutants in Shell's discharge and protect the Providence River.

95. When Shell fails to sample at the right time and under the right conditions as set forth in the Permit, it fails to capture an accurate picture of the pollution discharging from its facility.

Water Quality Standards

96. The Permit states: “[d]ischarges which cause a violation of water quality standards are prohibited.” Permit Part II.o at 7.

97. The State water quality standards for benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene are well below “1” ug/L. *See* R.I. Code R. 25-16-25, Appendix B, Table 1 (DEM Ambient Water Quality Criteria and Guidelines).

98. Upon information and belief, Shell is violating Rhode Island water quality standards, at a minimum, on the days in which Shell has reported “<1” ug/L for the parameters listed above. *See supra*, ¶ 80.

Oil Sheen

99. The Permit states: “[t]he discharge shall not cause visible discoloration of the receiving waters” and “[t]he effluent shall contain neither a visible oil sheen, foam, nor floating solids at any time.” Permit Part I.A.4.b & I.A.4.c, at 8.

100. State water quality standards prohibit any “sludge deposits, solid refuse, floating solids, oil, grease, scum” in Class SB1 {a} waterbodies, including the relevant portion of the Providence River. R.I. Code R. 25-16-25:8, Table 2.8.D.(3).

101. There have been past and ongoing discharges associated with the Providence Terminal that result in a visible oil sheen at the Providence Terminal outfalls and in the Providence River.

102. A 2012 Emergency Response Report, filed with the DEM Division of Compliance and Inspection, stated that “oil has been coming out into the Providence River [near one of the

outfalls],” State of Rhode Island and Providence Plantations Department of Environmental Management, *Emergency Response Report*, by DEM Investigator Jill Eastman (Feb. 23, 2012); *see also infra*, ¶ 110, in violation of the Permit.

Operation and Maintenance of Outfall Pipes

103. The Permit requires that “[t]he wastewater collection and treatment system shall be operated and maintained in order to provide optimal treatment of the wastewaters prior to discharge to the receiving water.” Permit Part I.B.4, at 11.

104. The current condition of the Providence Terminal wastewater collection and treatment system does not comply with this provision of the Permit.

105. The Providence Terminal outfall pipes, which discharge directly into the Providence River, are in disrepair.

Risks to the Providence Terminal

106. The Providence Terminal is at risk from coastal flooding caused by sea level rise, increased and/or more intense precipitation, increased magnitude and frequency of storm events, and increased magnitude and frequency of storm surges—all of which will become, and are becoming, worse as a result of climate change.

107. The location, elevation, and lack of preventative infrastructure at the Providence Terminal make it especially vulnerable to these risks.

108. Shell has not implemented actions to address, mitigate, or eliminate these vulnerabilities at the Providence Terminal.

109. Public records associated with the Providence Terminal acknowledge that its stormwater drainage and treatment system cannot effectively handle large precipitation events, even as these events are increasing in frequency and duration.

110. In a 2010 Emergency Response Report documenting a heavy rain event resulting in a spill, DEM Investigator John Leo states: “I checked the area around the facility and discovered a heavy sheen coming out of several storm drains along the shore. This was due to the heavy rains over the last few days the spill was coming out of the drains so fast that booms will not work and the conditions are not conducive to using absorbent pads and booms on the sheen.” State of Rhode Island and Providence Plantations Department of Environmental Management, *Emergency Response Report*, by Investigator John Leo (Apr. 5, 2010).

111. The heavy rains referenced in the Emergency Response Report had occurred a full week earlier, on March 29 and 30. *See* National Oceanic and Atmospheric Administration (“NOAA”) & National Centers for Environmental Information, *Record of Climatological Observations, Providence, RI*.

112. According to DEM in issuing the Permit, “[t]he circumstances at the facility have not substantially changed since the issuance of the last RIPDES permit” Statement of Basis IV, at 7.

113. Preparation for spills and other releases of hazardous substances is especially important at the Providence Terminal given its vulnerability to coastal flooding caused by sea level rise, increased and/or more intense precipitation, increased magnitude and frequency of storm events, and increased magnitude and frequency of storm surges—all of which will become, and are becoming, worse as a result of climate change.

114. In January 2017, NOAA released a report entitled *Global and Regional Sea Level Rise Scenarios for the United States*, in which NOAA increased its worst case sea level rise prediction to a greater-than-eight-foot increase in sea level rise in Rhode Island by 2100. *See* Rhode Island

Coastal Resources Management Council (“CRMC”), *New NOAA sea level rise projections dramatically increase by 2100* (Feb. 22, 2017), www.crmc.ri.gov/news/2017_0222_sealevel.html.

115. In reference to the report, Grover Fugate, executive director of CRMC stated: “[t]o put in perspective we’ve had 10 inches (of sea-level rise) during the last 90 years. We’re about to have 10 feet in the next 80 years.” Tim Faulkner, *Ocean State Sea level-Rise Estimate Now Above 9 Feet*, ECoRI (Feb. 12, 2017), <https://www.ecori.org/climate-change/2017/2/12/see-level-rise-estimate-now-above-9-feet>.

116. Findings of the NOAA report indicate that “[a]long regions of the Northeast Atlantic (Virginia coast and northward) and the western Gulf of Mexico coasts, RSL [relative sea level] rise is projected to be greater than the global average for almost all future GMSL [global mean sea level] rise scenarios.” See NOAA, *Global and Regional Sea Level Rise Scenarios for the United States*, at vii (2017), https://tidesandcurrents.noaa.gov/publications/techrpt83_Global_and_Regional_SLR_Scenarios_for_the_US_final.pdf.

117. According to CRMC, based on past patterns of flooding, the Federal Emergency Management Agency’s (“FEMA”) National Flood Insurance Program has already designated 14% of Rhode Island’s landbase as Special Flood Hazard Areas—areas with a 1% annual chance of flooding in a given year. See CRMC, *The State of Rhode Island Coastal Resources Management Program, As Amended*, Section 145 at 5 (Dec. 2012), <http://www.crmc.ri.gov/regulations/RICRMP.pdf>.

118. The FEMA flood map for the area where the Providence Terminal is located, which was last revised in September 2013, shows that almost all of the Providence Terminal is within the flood hazard zone.

119. The portion of the Providence Terminal located to the east of Allens Avenue is designated as one of the “Special Flood Hazard Areas (SFHAs) Subject to Inundation by the 1% Annual Chance Flood.”

120. The 1% annual chance flood, also known as the base flood or 100-year flood, is the flood that has a 1% chance of being equaled or exceeded in any given year.

121. Most of the western portion of the Providence Terminal (to the west of Allens Avenue) is designated as “Other Flood Areas” on the FEMA flood map.

122. The FEMA flood map depicts the “Limit of Moderate Wave Action,” which “represents the approximate landward limit of the 1.5-foot breaking wave,” as located further inland than the group of tanks closest to the Providence River.

123. In 2005, FEMA described the Metro Bay Region—which includes twenty-four miles of shoreline along Cranston, East Providence, Providence, and Pawtucket, including the Providence Terminal—as “the Achilles’ heel of the Northeast due to its vulnerability to flooding.” *Natural Hazards: Hurricanes, Floods, and Sea Level Rise in the Metro Bay Region, Special Area Management Plan, Analysis of Issues and Recommendations for Action*, at 4 (2009), <http://sos.ri.gov/documents/archives/regdocs/released/pdf/CRMC/5766.pdf>. The region faces increasingly frequent and intense storms caused by rising temperatures, sea levels, and precipitation rates.

124. The Providence River’s shoreline has evolved over more than two centuries of development and landfill. From 1939 to 2003, the site containing the Providence Terminal’s East Side Tank Farm expanded by as much as 112.26 m (368.3 ft) into the Providence River. *See CRMC, Shoreline Change Maps, Narragansett Bay, Rhode Island: Providence, Fox Point Reach* (2003), http://www.crmc.ri.gov/maps/shorechange/Providence_Fox_Point_Reach.pdf.

125. Situated on backfill, the Providence Terminal is at risk from coastal flooding caused by sea level rise, increased and/or more intense precipitation, increased magnitude and frequency of storm events, and increased magnitude and frequency of storm surges—all of which will become, and are becoming, worse as a result of climate change.

126. The Port of Providence, located within the Metro Bay Region on the Providence River, is directly at risk from these impacts. A URI research team funded by the Rhode Island Department of Transportation examined the vulnerabilities of the Port of Providence to impacts such as storm surge, sea level rise, and increased frequency and strength in storms. The research team found that “[s]ince 1851, 37 hurricanes have come within 50 miles of Rhode Island”—“approximately a ‘4 year return period.’” *Special House Commission to Study Economic Risk Due to Flooding and Sea Level Rise*, submitted to the Rhode Island House of Representatives, at 26–28 (May 12, 2016), <http://www.rilin.state.ri.us/commissions/fsrcomm/commdocs/20160512%20Economic%20Risk%20Due%20to%20Flooding%20and%20Sea%20Level%20Rise%20-%20final.pdf>. When accounting for climate change impacts, such as increased frequency and intensity of storms, as well as sea level rise, a “1 in 100 year storm scenario could become the 1 in 3 year storm scenario.” *Id.*

127. CRMC developed StormTools—a series of maps for the Rhode Island Shoreline Change Special Area Management Plan. In developing those maps, researchers examined climate change risks such as sea level rise, floodplain mapping, extra/tropical storms, and nuisance storms. Applying data, including, but not limited to, data from the U.S. Army Corps of Engineers’ *North Atlantic Coast Comprehensive Study of storm surge and wave height at the 95% confidence interval* and the NOAA high curve Sea Level Rise projections (*Sea-Level Change Curve Calculator*), CRMC predicted coastal inundation due to storm surge and tides “today.”

128. As indicated in the StormTools modeling, the majority of the Providence Terminal is presently at risk from a 4%, 2%, 1%, and 0.2% annual chance storm at respectively increasing flood depths. *See* CRMC, URI CRC, *TODAY: Extra/Tropical Storms*, Advanced STORMTOOLS, <http://arcg.is/1Wv9uT> (select “Content” on the top left to reveal selections for 25, 50, 100, and 500 year coastal storms; selecting those storms reveal maps showing flooding) (last visited Aug. 15, 2017).

129. According to StormTools, for 25 year coastal storms—which have a 4% chance of occurring in a given year—researchers predicted flood depths as great as 10 feet, with impacts extending to the West Side Tank Farm of the Providence Terminal.

130. According to StormTools, for 50 year coastal storms—which have a 2% chance of occurring in a given year—researchers predicted flood depths as great as 11 feet, with impacts extending to the West Side Tank Farm of the Providence Terminal.

131. According to StormTools, for 100 year coastal storms—which have a 1% chance of occurring in a given year—researchers predicted flood depths as great as 13 feet, with impacts extending to the West Side Tank Farm of the Providence Terminal.

132. According to StormTools, for 500 year coastal storms—which have a 0.2% chance of occurring in a given year—researchers predicted flood depths as great as 18 feet, with impacts extending to the West Side Tank Farm of the Providence Terminal.

133. NOAA developed the “SLOSH” model (Sea, Lake, and Overland Surges from Hurricanes), which produces hurricane surge values for worst case hurricane surge inundation areas. The Army Corps of Engineers’ New England District utilized the data to examine areas of inundation for Category 1, 2, 3, and 4 hurricanes, producing a GIS overview layer on the map. As indicated in the “SLOSH” model, the majority of the Providence Terminal East Side Tank Farm is included

within a “Category 1” and “Category 2” Hurricane Surge Inundation Zone, nearly the entire Providence Terminal is included within the “Category 3” Hurricane Surge Inundation Zone, and the entire Providence Terminal is included within the “Category 4” Hurricane Surge Inundation Zone:



Hurricane Surge
Inundation Areas (Worst
Case) for Providence
County

1
2
3
4

See URIEDC, RIGIS, *Hurricane Surge Inundation Areas (Worst Case)*, <http://www.arcgis.com/home/webmap/viewer.html?useExisting=1&layers=43169083ba5f4566ae38be9223450a3d> (last visited Aug. 15, 2017).

134. The Providence Terminal is at risk of discharging oil and other pollutants due to sea level rise, which will become, and is becoming, worse as a result of climate change.

135. The Providence Terminal has discharged, and is at risk of discharging, oil and other pollutants due to increased and/or more intense precipitation, which will become, and is becoming, worse as a result of climate change.

136. The Providence Terminal has discharged, and is at risk of discharging, oil and other pollutants due to increased magnitude and frequency of storm events, which will become, and are becoming, worse as a result of climate change.

137. The Providence Terminal is at risk of discharging oil and other pollutants due to increased magnitude and frequency of storm surges, which will become, and are becoming, worse as a result of climate change.

138. Shell is aware of these risks, yet has failed to disclose or integrate sea level rise, increased and/or more intense precipitation, increased magnitude and frequency of storm events, and increased magnitude and frequency of storm surges—all of which will become, and are becoming, worse as a result of climate change—in the design, operation, and management of the Providence Terminal, as required under federal law.

Climate Change Impacts

139. In *Massachusetts v. EPA*, the Supreme Court recognized “the enormity of the potential consequences associated with manmade climate change” and “[t]he risk of catastrophic harm.”

549 U.S. 497, 525-26 (2007). “The harms associated with climate change are serious and well recognized.” *Id.* at 521.

140. The U.S. Global Change Research Program produces a National Climate Assessment that “assesses the science of climate change and its impacts across the United States, now and throughout this century.” J. M. Melillo et al., *Climate Change Impacts in the United States: Third National Climate Assessment*, iv (2014), http://s3.amazonaws.com/nca2014/low/NCA3_Climate_Change_Impacts_in_the_United%20States_LowRes.pdf?download=1. The Third National Climate Assessment, released in May 2014, was produced by “[a] team of more than 300 experts [], guided by a 60-member National Climate Assessment and Development Advisory Committee,” and was “extensively reviewed and revised based on comments from the public and experts, including a panel of the National Academy of Sciences.” *Id.*

141. According to the Third National Climate Assessment:

- a. “Global climate is changing and this is apparent across the United States in a wide range of observations. The global warming of the past 50 years is primarily due to human activities, predominantly the burning of fossil fuels.” *Id.* at 15.
- b. “Some extreme weather and climate events have increased in recent decades, and new and stronger evidence confirms that some of these increases are related to human activities.” *Id.*
- c. “Human-induced climate change is projected to continue, and it will accelerate significantly if global emissions of heat-trapping gases continue to increase.” *Id.*

- d. “Impacts related to climate change are already evident in many sectors and are expected to become increasingly disruptive across the nation throughout this century and beyond.” *Id.*
 - e. “Climate change threatens human health and well-being in many ways, including through more extreme weather events and wildfire, decreased air quality, and diseases transmitted by insects, food, and water.” *Id.* at 16.
 - f. “Infrastructure is being damaged by sea level rise, heavy downpours, and extreme heat; damages are projected to increase with continued climate change.” *Id.*
 - g. “Water quality and water supply reliability are jeopardized by climate change in a variety of ways that affect ecosystems and livelihoods.” *Id.*
 - h. “Climate disruptions to agriculture have been increasing and are projected to become more severe over this century.” *Id.*
 - i. “Ecosystems and the benefits they provide to society are being affected by climate change. The capacity of ecosystems to buffer the impacts of extreme events like fires, floods, and severe storms is being overwhelmed.” *Id.* at 17.
 - j. “Ocean waters are becoming warmer and more acidic, broadly affecting ocean circulation, chemistry, ecosystems, and marine life.” *Id.*
 - k. “Planning for adaptation (to address and prepare for impacts) and mitigation (to reduce future climate change, for example by cutting emissions) is becoming more widespread, but current implementation efforts are insufficient to avoid increasingly negative social, environmental, and economic consequences.” *Id.*
142. According to the Third National Climate Assessment Chapter on the Northeast, Chapter 16:

- a. “Sea level rise of two feet, without any changes in storms, would more than triple the frequency of dangerous coastal flooding throughout most of the Northeast.” Radley Horton et al., *The Third National Climate Assessment, Ch. 16: Northeast*, 374 (2014), <https://www.conservationgateway.org/ConservationPractices/Marine/crr/library/Documents/USNCA%20Chapter%2016%20Northeast.pdf>.
- b. “Between 1895 and 2011, temperatures in the Northeast increased by almost 2°F (0.16°F per decade), and precipitation increased by approximately five inches, or more than 10% (0.4 inches per decade).” *Id.* at 373.
- c. “Coastal flooding has increased due to a rise in sea level of approximately 1 foot since 1900. This rate of sea level rise exceeds the global average of approximately 8 inches” *Id.*
- d. “The Northeast has experienced a greater recent increase in extreme precipitation than any other region in the United States; between 1958 and 2010, the Northeast saw more than a 70% increase in the amount of precipitation falling in very heavy events (defined as the heaviest 1% of all daily events).” *Id.*
- e. “Infrastructure will be increasingly compromised by climate-related hazards, including sea level rise, coastal flooding, and intense precipitation events.” *Id.* at 379.

143. Following Hurricane Sandy, the Governor of Rhode Island signed into law the Resilient Rhode Island Act of 2014, establishing the Rhode Island Executive Climate Change Coordinating Council (“EC⁴”). R.I. Gen. Laws Chapter 46-6.2. By statute, the EC⁴ releases an annual report. The most recent report was released in June 2016.

144. According to the June 2016 *EC⁴ Annual Report*:

- a. “The impacts of climate change, from rising sea levels to more extreme rainfall events, are already being felt in Rhode Island, like elsewhere in New England. It is widely accepted that action is needed now, not just in the future.” *EC⁴, EC⁴ Annual Report*, 4 (2016),
<http://www.planning.ri.gov/documents/climate/2016/EC4ARJune%202016.pdf>.
- b. “Sea levels have risen over 9 inches in Rhode Island since 1930 as measured at the Newport tide gauge. . . . The historic rate of sea level rise (SLR) at the Newport tide gauge from 1930 to 2015 is presently 2.72 mm/year or more than an inch per decade.” *Id.* at 28.
- c. “SLR at the Newport tide gauge from 1984-2011 was 4.1mm/year. This rate is similar to the mean annual rate of SLR for Newport of 4.8 mm/year for the period of 1999 to present as determined from the Permanent Service for Mean Sea Level at Newport.” *Id.* (citation omitted).
- d. “A recent analysis of global sea levels, correcting for spatial bias in the tide gauge records, calculates a rate of 1.2 mm/year from 1901–1990, but along the U.S. East Coast the rate was 1.8 mm/year during the same period.” *Id.* at 29 (citations omitted).
- e. “Between 1950–1979 and 1980–2009, the SLR rate increase along this coastline was 3-4 times higher than the global average. Because of this factor, it is likely that this region, which includes Rhode Island, will see an additional 8 to 11+ inches above global average SLR by 2100.” *Id.* (citation omitted).

- f. “The 20th century increase in the rate of global mean sea level rise is attributed to a combination of natural and anthropogenic radiative forcing.” *Id.* (citation omitted).
- g. “NOAA is projecting as much as 6.6 feet of SLR by the end of this century in Rhode Island. In the shorter-term, NOAA predicts upwards of 1 foot by 2035 and 1.9 feet by 2050.” *Id.*
- h. “This has critical implications for RI, as approximately 6, 13 and 20 square miles of Rhode Island’s coastal areas will be permanently flooded with 1, 3 and 5 feet of SLR, respectively, as quantified by Geographic Information System (GIS) analysis.” *Id.*
- i. “Current global [temperature] averages are around 1°C degree above pre-industrial levels, and rising (see Figure 2.1).” *Id.* at 31.
- j. “Global temperature changes are less variable than for the contiguous US or RI where temperature rise and extremes are more apparent. A series of impacts are expected to be significantly worse at 2 degrees global mean temperature rise compared to 1.5 degrees.” *Id.* (citation omitted).
- k. “Between 1950 and 2014 the number of days at TF Green Airport over 80 degrees has been increasing.” *Id.* at 32 (citation omitted).
- l. “Physical infrastructure is vulnerable, including roads due to increased frequency of freeze-thaw cycles. Electrical grids, power plants, and rail systems are also sensitive to heat as temperatures surpass 90 degrees F.” *Id.* (citation omitted).
- m. “The water in Narragansett Bay is getting warmer. Over the past 50 years, the surface temperature of the Bay has increased 1.4° to 1.6° C (2.5° to 2.9° F). Winter

water temperatures in the Bay have increased even more, from 1.6° to 2.0° C (2.9° to 3.6° F).” *Id.* at 33 (citation omitted).

- n. “Ocean temperatures are increasing world-wide, but temperature increases in the northwestern Atlantic Ocean are expected to be 2-3 times larger than the global average.” *Id.* (citation omitted).
- o. “Climate change is expected to result in more frequent heavy rains, affecting stream flow in Northeastern states, with increases in 3-day peak flows contributing to increases in flooding risks.” *Id.* at 40 (citation omitted).
- p. “Rhode Island has experienced a significant increase in both flood frequency and flood severity over the past 80 years. RI and throughout most of southern New England has experienced a doubling of the frequency of flooding and an increase in the magnitude of flood events.” *Id.* at 41 (citation omitted).

145. The Rhode Island General Assembly established CRMC in 1971. CRMC’s “primary responsibility is for the preservation, protection, development and where possible the restoration of the coastal areas of the state via the implementation of its integrated and comprehensive coastal management plans and the issuance of permits for work with the coastal zone of the state.” *See CRMC, About the CRMC*, <http://www.crmc.ri.gov/aboutcrmc.html> (last visited Aug. 26, 2017).

146. According to the Rhode Island Ocean Special Area Management Plan (“SAMP”) *Volume I*:

- a. “There is strong scientific consensus that carbon dioxide in the atmosphere warms the air and sea surface, accelerates sea level rise, makes the ocean more acidic, causes shifts in precipitation and weather patterns, and leads to more extreme weather events, among other effects.” CRMC, *Rhode Island Ocean Special Area*

Management Plan, Vol. 1, Chapter 3: Global Climate Change, 5 (2010) (citations omitted),

http://seagrant.gso.uri.edu/oceansamp/pdf/samp_approved/300_GlobalClimateChange_APPROVED_5.4_Clean.pdf.

- b. “These effects are already being witnessed globally and in Rhode Island and are projected to intensify in years to come.” *Id.*
- c. “The [] proactive choice that Rhode Island can make is ‘adaptation.’ Adaptation is an adjustment in human or natural systems to reduce harm from climate change impacts or exploit beneficial opportunities Reactive adaptation is likely to be less efficient and result in lost opportunities.” *Id.* at 5-6.
- d. “In the long run, warming may also produce other global changes that will affect the Ocean SAMP area, positively and negatively. These include, among others, the melting of the Greenland ice sheet and Arctic sea ice, and collapse of Atlantic currents that would result in serious societal costs of coastal land and infrastructure loss and major changes to the marine environment.” *Id.* at 8.
- e. “Storms and associated storm surge cause damage to ports, seawalls and revetments, docks, roads, bridges, wastewater treatment plants and stormwater infrastructure.” *Id.* at 12.
- f. “Coastal and offshore infrastructure may be subject to greater damage from more intense storms and increased decay from increasingly acidic seas.” *Id.* at 41 (citation omitted).

- g. “[C]oastal infrastructure is more likely to be flooded by higher sea levels, and more coastal infrastructure will be exposed to higher wave loads and tidal fluxes, increasing fatigue and corrosion.” *Id.*
- h. “Sea level rise of the magnitude predicted could also potentially compromise onsite wastewater treatment systems, municipal sewage treatment plants, and stormwater infrastructure.” *Id.* at 43.
- i. “Higher sea levels increase the likelihood of flooding and inundation of coastal lands and infrastructure. Any given storm event will surge higher on land because the relative sea level is higher than in the past and be exacerbated in the future by more intense storms.” *Id.*
- j. “This can affect the use of infrastructure in ports and harbors both over the short term (during a flooding event) and long term (extensive damage from inundation) and impact the ability for vessels to access the coast (for example, to unload cargo or pick up passengers).” *Id.* (citation omitted).
- k. “Higher flood levels and storage-area inundation may also inundate contaminated (or potentially contaminated) lands, and/or infrastructure not designed to withstand flooding. These areas could require new containment methods to prevent leaching (U.S.EPA 2008b).” *Id.*
- l. “Rhode Island has 47.1 square miles (mi²) (122.0 square kilometers (km²)) of land lying within 4.9 vertical feet (1.5 meters) of sea level with an additional 24 mi² (108.8 km²) between 4.9 and 11.5 feet (1.5 and 3.5 meters). This 4.9-foot (1.5-meter) contour roughly represents the area that would be inundated during spring

high water with a 2.3-foot (0.7 meter) rise in sea level. This sea level rise scenario is within current end-of-century projections.” *Id.*

- m. “By mid-century, the 100-year flood is expected to occur more frequently than every 25 years in nearby Woods Hole, Mass., under the high emissions scenario. By late century, it is expected to occur more frequently than every two years.” *Id.* at 43 (citation omitted).
- n. “When flooding overtops ports, there is large area of inland inundation because ports are typically built in flat, low-lying areas (U.S.EPA 2008b). Options for protection include, but are not limited to, elevating facilities, filling land, and/or installing shoreline protection structures.” *Id.* at 44.
- o. “Providence’s vulnerability to flooding stems from two main geographic features: its location at the head of Narragansett Bay and its low elevation downtown and along the port.” *Id.*
- p. “During the Hurricane of 1938, Providence experienced a storm surge of more than 15 feet above mean tide level (MTL), with waves measuring 10 feet above the surge level. The hurricane flood waters inundated the city, damaged buildings and other infrastructure, and demolished the wharves of the inner harbor. Damage amounted to \$16.3 million, equivalent to about \$225 million in 2000 dollars.” *Id.* (citation omitted).
- q. In 1954, the downtown area was flooded by 12 feet of water. Damage is estimated to have been \$25.1 million, about \$134 million in 2000 dollars. *Id.* (citations omitted).

- r. “Increased storm intensity will also increase degradation and vulnerability of associated infrastructure. Movements of sediment due to increased storminess may also decrease safety of structures and increase probability of flooding through erosion of coastal land.” *Id.* at 45 (citation omitted).
- s. “More intense storms, bringing more precipitation in short periods of time, will also require increased capacity of stormwater facilities adjacent to coastal infrastructure supporting port facilities (U.S.EPA 2008b).” *Id.*
- t. “The Coastal Resources Management Council (‘Council’) developed and adopted on January 15, 2008, Section 145 Climate and Sea Level Rise Policy.” *Id.* at 55.
 - i. “The Council will prohibit those land-based and offshore development projects that based on a sea level rise scenario analysis will threaten public safety or not perform as designed resulting in significant environmental impacts.” *Id.* at 56.
 - ii. “The U.S. Army Corps of Engineers (ACOE) has developed and is implementing design and construction standards that consider impacts from sea level rise. These standards and other scenario analysis should be applied to determine sea level rise impacts.” *Id.*
 - iii. “The Council supports the application of enhanced building standards in the design phase of rebuilding coastal infrastructure associated with the Ocean SAMP area, including port facilities, docks, and bridges that ships must pass under.” *Id.*
 - iv. “The Council will reassess coastal infrastructure and seaworthy marine structure building standards periodically not only for sea level rise, but also

for other climate changes including more intense storms, increased wave action, and increased acidity in the sea.” *Id.*

147. “The impacts of climate change upon Rhode Island’s built and natural environments are wide-ranging, discernible and documented, and, in many cases growing in severity. The climatological sciences with increasing temporal and spatial accuracy project substantial future impacts upon Rhode Island, including stronger, more frequent hurricanes and Nor’easters, greater frequency of other extreme weather events such as heat waves.” Rhode Island Climate Change Commission, *Adapting to Climate Change in the Ocean State: A Starting Point* (2012), http://www.crmc.ri.gov/climatechange/RICCC_2012_Progress_Report.pdf.

148. This unfortunate reality has been demonstrated recently in the context of increased severe weather events, including Superstorm Sandy. In late October 2012, Motiva Enterprises LLC’s (at the time, a joint venture between Royal Dutch Shell plc and Saudi Aramco) Sewaren Terminal in New Jersey suffered a 378,000 gallon oil release into the Arthur Kill as a result of a containment failure. As reported in the New Jersey news media outlet NJ.com:

[A]t the Sewaren terminal of Motiva Enterprises, a subsidiary of Shell, the tidal surge damaged bulk fuel tanks, releasing approximately 378,000 gallons of low-sulfur diesel, officials said. Nearly three quarters of that amount escaped the containment area, rushing into the Arthur Kill and its tributaries. That’s like 30 tanker trucks pouring their contents into the water.

It represents the largest fuel or oil spill in New Jersey in perhaps a decade or more, officials said.

‘That’s a major spill,’ said Larry Ragonese, a spokesman for the state Department of Environmental Protection. ‘On a normal basis, we would have had quite a bit of uproar and media attention.’

That, of course, did not happen as the region reeled amid death, destruction and darkness. Quickly and quietly, though, Shell and the

other two oil companies that experienced leaks — at the Phillips 66 refinery in Linden and at the Kinder Morgan terminal in Carteret — moved in to plug breached tanks and contain what had already been released.

Within 24 hours, hundreds of workers had responded with oil skimmers, vacuum trucks, water barges, work boats and thousands of feet of containment boom, according to local, state and federal officials who have provided oversight for the work.

Ryan Hutchins, *Oil Spills, Other Hurricane Sandy Damage Present N.J. with Potential Pollution Headaches*, NJ.COM (Nov. 14, 2012),

http://www.nj.com/news/index.ssf/2012/11/hurricane_sandy_oil_spills.html.

149. Harvard's Daniel P. Schrag, Sturgis Hooper Professor of Geology in the Faculty of Arts and Sciences, stated in a news report regarding Superstorm Sandy that:

By midcentury, this will be the new normal . . . How do you deal with extreme heat in the summer? It's going to be a challenge, but humans are adaptable. It's not going to be easy, just like a 13-foot storm surge will be the new norm on the Eastern seaboard.

Edward Mason, *Hello Again, Climate Change: Sandy Prompts Renewed Interest and Concern, and Schrag Says it Should*, HARVARD GAZETTE (Nov. 6, 2012),

<http://news.harvard.edu/gazette/story/2012/11/hello-again-climate-change/>.

150. Considering the future implications of storms such as Superstorm Sandy, URI Professor Austin Becker commented: “[p]orts provide a public good and we all benefit from that . . . and so a storm hitting the Port of Providence can have huge ramifications for the whole state.” *Preparing Ports to Ride Out the Storm*, RHODE ISLAND SEA GRANT (Mar. 19, 2015), <http://seagrants.gso.uri.edu/preparing-ports-to-ride-out-the-storm/>.

Shell has Long Been Aware of Climate Change and its Related Impacts

151. Shell has long been well aware of the present impacts and risks of climate change.

152. Despite knowing of the certainty of rising temperatures and sea levels since at least as early as the 1970s, Shell did not use its knowledge to properly prepare its Providence Terminal for such risks.

153. Shell takes the following public policy position on climate change: “[w]e have recognised the importance of the climate challenge for a long time now, and we share our knowledge, experience and understanding of the energy system with policymakers.” Shell Global, *Climate Change – Public Policy Position*, <http://www.shell.com/sustainability/sustainability-reporting-and-performance-data/performance-data/greenhouse-gas-emissions/climate-change-public-policy-position.html> (last visited Aug. 26, 2017).

154. According to Shell, “[w]e were one of the first energy companies to recognise the climate change threat and to call for action.” Royal Dutch Shell plc, *Responsible Energy Sustainability Report*, at 12 (2008), <https://www.unglobalcompact.org/system/attachments/1307/original/COP.pdf?1262614257>.

155. However, Shell has not disclosed or integrated sea level rise, increased and/or more intense precipitation, increased magnitude and frequency of storm events, and increased magnitude and frequency of storm surges—all of which will become, and are becoming, worse as a result of climate change—in the design, operation, and management of the Providence Terminal.

156. Shell is a science and engineering based company that employs roughly 43,000 technical and engineering staff and invests \$1 billion annually in research and development projects. “Thousands of Shell scientists, researchers and engineers around the globe are working to develop tomorrow’s ground-breaking solutions, collaborating with experts and specialists beyond our industry.” Shell Global, *Innovation Through R&D*, <http://www.shell.com/energy-and->

innovation/overcoming-technology-challenges/innovation-through-research-and-development.html (last visited Aug. 15, 2017).

157. Shell has pursued collaborative research with leading universities such as University of California, Berkeley; Massachusetts Institute of Technology; Delft University; Imperial College London; The Institute for Sustainable Process Technology; Research Institute of Petroleum Exploration and Development; and Shanghai Advanced Research Institute of the Chinese Academy of Sciences. Shell Global, *Innovative Collaborations*, Academia and Research, <http://www.shell.com/energy-and-innovation/innovating-together/innovative-collaborations.html> (last visited Aug. 15, 2017).

158. Shell is a participant in numerous international initiatives related to climate change, including, but not limited to: founding member of the International Emissions Trading Association (1999); Carbon Disclosure Project (participation since 2003); World Business Council for Sustainable Development; Prince of Wales Corporate Leaders Group on Climate Change (2005-2015), “Communiqué series,” 2012 and 2014 Communiqués; World Bank: 2014 Carbon Pricing Statement, 2015 Zero Routine Flaring by 2030 Initiative, and Carbon Pricing Leadership Coalition; Global CCS Institute; 2015 Oil and Gas Climate Initiative; Paying for Carbon Coalition – 2015: letter of six CEOs to Ms. Christina Figueres, Executive Secretary of the UNFCCC; Energy Transitions Commissions; and Taskforce for Climate-Related Financial Disclosures (TCFD). Shell Global, *Climate Change – Public Policy Position*, Our Efforts, <http://www.shell.com/sustainability/sustainability-reporting-and-performance-data/performance-data/greenhouse-gas-emissions/climate-change-public-policy-position.html> (last visited Aug. 26, 2017).

159. For over 40 years, Shell has claimed to develop “scenarios” in order to “make crucial choices in uncertain times and tackle tough energy and environmental issues.” Shell Global, *Earlier Scenarios*, <http://www.shell.com/energy-and-innovation/the-energy-future/scenarios/new-lenses-on-the-future/earlier-scenarios.html> (last visited Aug. 15, 2017). Since the 1990s, Shell claims to have “help[] other organisations in developing their own scenarios in various subject areas,” including “climate change with the Intergovernmental Panel on Climate Change [(“IPCC”).” Peter Knight, *The Shell Report: Profits and Principles – does there have to be a choice?* (1998), http://www.shell.com/sustainability/sustainability-reporting-and-performance-data/sustainability-reports/previous/_jcr_content/par/expandablelist/expandablesection_332888471.stream/1454157664246/7419d7c0b96ee36e92059e205107e3106d35d9d8f3a4909c8523f49ded9e4727/shell-sustainability-report-1998-1997.pdf.

160. The IPCC “was established by the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO) in 1988 to provide the world with a clear scientific view on the current state of knowledge in climate change and its potential environmental and socio-economic impacts.” IPCC, *Organization*, <http://www.ipcc.ch/organization/organization.shtml> (last visited Aug. 27, 2017).

161. Shell has contributed its “scenarios” to IPCC Assessment Reports and Special Reports since as early as 1995 and as recently as 2007.

162. Shell scientists have contributed to IPCC Assessment Reports in the capacities of Reviewer, Contributing Author, Expert Reviewer, and Lead Author since the Second Assessment Report and up until the most recent Fifth Assessment Report. Shell scientists served in Working Groups I and III on the topics of Scientific Basis and Mitigation of Climate Change, respectively.

163. Shell scientists have further contributed to IPCC Special Reports, including working on the 1994 report entitled *Radiative Forcing of Climate Change and An Evaluation of the IPCC IS92 Emission Scenarios*, https://www.ipcc.ch/pdf/special-reports/cc1994/climate_change_1994.pdf; the 2000 report entitled *Emissions Scenarios*, https://www.ipcc.ch/ipccreports/sres/emission/emissions_scenarios.pdf; the 2000 report entitled *Methodological and Technological Issues in Technology Transfer*, <http://www.ipcc.ch/ipccreports/sres/tectran/index.php?idp=0>; and the 2005 report entitled *Carbon Dioxide Capture and Storage*, https://www.ipcc.ch/pdf/special-reports/srccs/srccs_wholereport.pdf.

164. Shell's decades-long development of scenarios illustrates an embedded company practice of preparedness. Shell claims that the scenarios have "helped us anticipate and adapt to momentous events like the oil shocks of the 1970s, the collapse of communist Europe in 1989, the surge in world energy demand and the threat of climate change." Shell Global, *Earlier Scenarios*, <http://www.shell.com/energy-and-innovation/the-energy-future/scenarios/new-lenses-on-the-future/earlier-scenarios.html> (last visited Aug. 15, 2017).

165. Despite acknowledging the value of anticipation and adaptation, Shell has not disclosed or integrated sea level rise, increased and/or more intense precipitation, increased magnitude and frequency of storm events, and increased magnitude and frequency of storm surges—all of which will become, and are becoming, worse as a result of climate change—in the design, operation, and management of the Providence Terminal.

166. As described in the Abstract of a 1969 paper authored by Shell entitled *An Ocean Data Gathering Program for the Gulf of Mexico*, in 1967, Shell initiated a study to prepare for increasing investments in deepwater oil and gas projects. M. M. Patterson (Shell Development Co.), *An*

Ocean Data Gathering Program for the Gulf of Mexico, Abstract, Fall Meeting of the Society of Petroleum Engineers (1969), <https://www.onepetro.org/conference-paper/SPE-2638-MS>. The Abstract states that “[d]ata on waves, winds, and currents are also needed for the development and calibration of environmental forecasting theories,” and “[the study’s] major task is to measure and record storm data.” *Id.*

167. In 1972, the American Petroleum Institute (“API”) released a status report on all group-sponsored environmental research projects. Shell is among the thirty-nine “company affiliations of committee members” listed in the status report. API, *Environmental Research, A Status Report*, at IV-1 (Jan. 1972), <http://files.eric.ed.gov/fulltext/ED066339.pdf>. The report contains a summary of a 1968 report on *Sources, Abundance, and Fate of Gaseous Atmospheric Pollutants* prepared for API. *Id.* at III-9. The API status report refers to the research initiative’s discussion of CO₂ as a “brief review of current thinking.” *Id.*

168. The *Sources, Abundance, and Fate of Gaseous Atmospheric Pollutants* report, by Stanford Research Institute (“SRI”), discusses the implications of a CO₂ generated “greenhouse effect” and consequential temperature increase, asserting that “[i]f the earth’s temperature increases significantly, a number of events might be expected to occur, including the melting of the Antarctic ice cap, a rise in sea levels, warming of the oceans, and an increase in photosynthesis.” Robinson et al., *Sources, Abundance, and Fate of Gaseous Atmospheric Pollutants*, SRI, at 108 (1968), excerpt at <https://www.smokeandfumes.org/documents/document16>. In the report, SRI further states that “[a]lthough there are other possible sources for the additional CO₂ now being observed in the atmosphere, none seems to fit the presently observed situation as well as the fossil fuel emanation theory.” *Id.* at 109.

169. In 1986, Shell circulated an internal report labeled “Confidential” and titled “The Greenhouse Effect.” The report’s summary states that “[m]an-made carbon dioxide, released into and accumulated in the atmosphere, is believed to warm the earth through the so-called greenhouse effect.” Shell Internationale Petroleum, *The Greenhouse Effect*, at 1 (1986), excerpt at <https://thecorrespondent.com/6286/if-shell-knew-climate-change-was-dire-25-years-ago-why-still-business-as-usual-today/692773774-4d15b476>. The report predicts the impacts of such warming, stating that “[m]athematical models of the earth’s climate indicate that if this warming occurs then it could create significant changes in sea level, ocean currents, precipitation patterns, regional temperature and weather.” *Id.* The report further acknowledges that “[w]ith fossil fuel combustion being the major source of CO₂ in the atmosphere, a forward looking approach by the energy industry is clearly desirable . . .” *Id.*

170. Despite such extensive early research—both conducted by Shell and presented to Shell—regarding climate change and its impacts, Shell has not disclosed or integrated sea level rise, increased and/or more intense precipitation, increased magnitude and frequency of storm events, and increased magnitude and frequency of storm surges—all of which will become, and are becoming, worse as a result of climate change—in the design, operation, and management of the Providence Terminal.

171. Meanwhile, Shell did incorporate such risks in ongoing company investments.

172. A 1989 New York Times article describes Shell’s efforts to design and construct a natural-gas production platform in the North Sea that would account for sea level rise. According to the article, in anticipation of sea level rise throughout the duration of the platform’s lifespan, the company’s engineers “are considering raising the platform from the standard 30 meters – the height now thought necessary to stay above the waves that come in a once-a-century storm – to 31

or 32 meters.” *Greenhouse Effect: Shell Anticipates A Sea Change*, THE NEW YORK TIMES (Dec. 20, 1989), <http://www.nytimes.com/1989/12/20/business/greenhouse-effect-shell-anticipates-a-sea-change.html>. The additional cost of a one-meter increase was sixteen million dollars (1989 USD Value). *Id.*

173. In the early 1990s, Shell joined Mobil, Imperial Oil, and Nova Scotia Resources Limited in the Sable Offshore Energy Project to examine oil exploration off the coast of Nova Scotia. The project produced a Development Plan containing an Environmental Impact Statement, which addressed “Global Warming Sea-Level Rise.” The Statement reads:

Numerous predictions of sea-level rise due to global warming have been made during the past decade (NRC, 1979; Shaw, Taylor and Forbes, 1992). The prediction of IPCC working group (World Meteorological Organization -- WMO, 1990) was that the mean sea-level rise would increase by 16-32 cm (with mean increase of 20 cm) by the year 2030; and by 33-75 cm (mean increase of 45 cm) by the year 2070. There are doubts that these predictions would apply across the globe.

The impact of a global warming sea-level rise may be particularly significant in Nova Scotia. The long-term tide gauge records at a number of locations along the N.S. coast have shown sea level has been rising over the past century. The water level data from the Halifax Harbour tide gauge (since 1851) have shown a rate of sea-level rise of about 3.18 mm/yr, based on records from 1896 to 1990, and of 3.63 mm/yr based on data from 1920 to 1990 (Shaw, Taylor and Forbes, 1992).

The estimated increase in water level due to global warming could vary from 0.20 to 1.4 m by the middle of the next century (Environment Canada, 1988). *For the design of coastal and offshore structures, an estimated rise in water level, due to global warming, of 0.5 m to [sic] may be assumed for the proposed project life (25 years).* However, there was no strong scientific support for such an estimate given in the literature.

ExxonMobil, *Development Plan: Sable Offshore Energy Project*, Volume 3, Chapter 4 (Environmental Setting), at 4-76 – 4-77 (emphasis added),

<http://soep.com/about-the-project/development-plan-application/> (last visited Aug. 15, 2017).

174. Shell integrated climate change impacts in project infrastructure design nearly three decades ago, but has failed to similarly disclose or integrate sea level rise, increased and/or more intense precipitation, increased magnitude and frequency of storm events, and increased magnitude and frequency of storm surges—all of which will become, and are becoming, worse as a result of climate change—in the design, operation, and management of the Providence Terminal.

175. In 1991, Shell published a twenty-eight minute educational film entitled “Climate of Concern,” which warned about the risks of climate change. *See* Damian Carrington and Jelmer Mommers, ‘*Shell knew*’: oil giant’s 1991 film warned of climate change danger, THE GUARDIAN (Feb. 28, 2017), <https://www.theguardian.com/environment/2017/feb/28/shell-knew-oil-giants-1991-film-warned-climate-change-danger>. Shell claimed the warning about climate change was “endorsed by a uniquely broad consensus of scientists in their report to the United Nations at the end of 1990.” *Id.* The film says that, “global warming is not yet certain, but many think that to wait for final proof would be irresponsible. Action now is seen as the only safe insurance.” *Id.*

176. Starting in 1998, Shell began to release annual Sustainability Reports.

177. The 1998 report, entitled *Profits and Principles – does there have to be a choice?*, says of the greenhouse effect: “there is concern that it will cause the world to warm up, which could lead to a change in climate and local weather patterns, possibly with increased droughts, floods, storms and sea level rise.” Peter Knight, *The Shell Report 1998: Profits and Principles – does there have to be a choice?*, at 40 (1998), http://www.shell.com/sustainability/sustainability-reporting-and-performance-data/sustainability-reports/previous/_jcr_content/par/expandablelist/expandablesection_332888471.stream/1454157

664246/7419d7c0b96ee36e92059e205107e3106d35d9d8f3a4909c8523f49ded9e4727/shell-sustainability-report-1998-1997.pdf.

178. Shell was an early member of the Global Climate Coalition (“GCC”), but withdrew its membership in April 1998 when the GCC began lobbying against establishing legally binding targets and timetables in the Kyoto Protocol, which developed milestones aimed to reduce CO₂ emissions. *Id.* at 41.

179. According to Shell, “[t]he main disagreement centred on the Kyoto protocol which aims to cut overall greenhouse gas emissions by 5% by the year 2012. The GCC is actively campaigning against legally binding targets and timetables as well as ratification by the US government. The Shell view is that prudent precautionary measures are called for.” *Id.*

180. Shell has since continued to publicly reiterate its support for international agreements, such as the Kyoto Protocol and the Paris Climate Agreement. Chris Noon, *Shell CEO Targets Washington Over Kyoto*, FORBES (Dec. 5, 2006), https://www.forbes.com/2006/12/05/shell-kyoto-ceo-face-cx_cn_1205autofacescan02.html (Former Shell CEO Jeroen van der Veer on the Kyoto Protocol: “For us as a company, the debate about CO₂ is over. We’ve entered a debate about what we can do about it.”); Samantha Raphelson, *Energy Companies Urge Trump to Remain in Paris Climate Agreement*, NPR (May 18, 2017), <http://www.npr.org/2017/05/18/528998592/energy-companies-urge-trump-to-remain-in-paris-climate-agreement> (Shell CEO Ben Van Beurden on the Paris Climate Agreement: “[w]e believe climate change is real;” “We believe that the world needs to go through an energy transition to prevent a very significant rise in global temperatures. And we need to be part of that solution in making it happen.”).

181. Despite providing such stark warnings about climate change, Shell has failed to disclose or integrate sea level rise, increased and/or more intense precipitation, increased magnitude and frequency of storm events, and increased magnitude and frequency of storm surges—all of which will become, and are becoming, worse as a result of climate change—in the design, operation, and management of the Providence Terminal.

182. In August 2005, Shell's Mars Platform in the Gulf of Mexico suffered damages during Hurricane Katrina, not coming back online until May 2006. The storm forced Shell to begin "preparing for hurricanes in the Gulf of Mexico." Shell, *The Shell Sustainability Report 2006: Meeting the Energy Challenge*, at 23 (2006), <https://www.unglobalcompact.org/system/attachments/1914/original/COP.pdf?1262614296>. In its 2006 Sustainability Report, Shell stated:

[w]e have used the knowledge gained from the Mars recovery to further improve the ability of our offshore equipment to withstand hurricanes and to reduce disruptions when equipment is damaged . . . In anticipation of future storms, we are improving our communications systems, increasing the number of helicopters and ships and spare parts we have on call, and working with others to find alternative ways to get oil to refineries safely when part of the pipeline network is damaged.

Id.

183. Despite taking mitigating steps at its Mars Platform in anticipation of future storms, Shell has failed to disclose or integrate sea level rise, increased and/or more intense precipitation, increased magnitude and frequency of storm events, and increased magnitude and frequency of storm surges—all of which will become, and are becoming, worse as a result of climate change—in the design, operation, and management of the Providence Terminal.

184. In 2013, Shell released the company's most recent scenario report applying "New Lenses on the Future," and providing detailed assessments of the causes of and risks posed by climate

change. The report, entitled *A Shift in Perspective for a World in Transition*, addresses an impending “resource stress nexus” between increasing demand and decreasing supply of food, water, and energy, stating: “[c]limate change could lead to extreme weather conditions, such as lengthy droughts and torrential flooding that would impact agriculture and livelihoods. Water shortages could intensify social and political instability, provoke conflicts, and cause irreparable environmental damage.” Shell International BV, *New Lens Scenarios, A Shift in Perspective for a World in Transition*, at 11 (2013),

http://www.shell.com/promos/english/_jcr_content.stream/1448477051486/08032d761ef7d81a4d3b1b6df8620c1e9a64e564a9548e1f2db02e575b00b765/scenarios-newdoc-english.pdf.

185. One year later, Shell released its first supplement to its New Lens Scenarios, examining sustainable city futures. The report, entitled *New Lenses On Future Cities*, addresses “climate adaptation” in coastal cities—including Rotterdam, where climate change resiliency efforts to mitigate against coastal flooding, heavy rains, and rising sea levels are under-way—demonstrating Shell’s extensive knowledge of the climate change challenges facing coastal communities. Shell International BV, *New Lenses On Future Cities, A New Lens Scenarios Supplement*, at 13-15 (2014), [http://www.shell.com/energy-and-innovation/the-energy-future/scenarios/new-lenses-on-future-](http://www.shell.com/energy-and-innovation/the-energy-future/scenarios/new-lenses-on-future-cities/_jcr_content/par/tabbedcontent/tab/textimage.stream/1447854282580/c391a74670d29b3e8f4f64a70a6d5653fb1f9fbee0ede22dd2daccdb5cdab2c/newlensesonfuturecities-june-2014.pdf)

[cities/_jcr_content/par/tabbedcontent/tab/textimage.stream/1447854282580/c391a74670d29b3e8f4f64a70a6d5653fb1f9fbee0ede22dd2daccdb5cdab2c/newlensesonfuturecities-june-2014.pdf](http://www.shell.com/energy-and-innovation/the-energy-future/scenarios/new-lenses-on-future-cities/_jcr_content/par/tabbedcontent/tab/textimage.stream/1447854282580/c391a74670d29b3e8f4f64a70a6d5653fb1f9fbee0ede22dd2daccdb5cdab2c/newlensesonfuturecities-june-2014.pdf).

186. In 2016, Shell released its latest New Lens Scenarios supplement, a report entitled *A Better Life With A Healthy Planet: Pathways to Net-Zero Emissions*. This scenario report states that “[t]o stabilise the climate requires achieving net-zero emissions globally to arrest the accumulation of CO₂ in the atmosphere and bring down the concentration of other greenhouse gases such as

methane. The more quickly this is realised, the lower the risks and impacts of climate change . . .”

Shell International BV, *A Better Life with a Healthy Planet: Pathways to Net-Zero Emissions, A New Lens Scenarios Supplement*, at 14 (2016), http://www.shell.com/energy-and-innovation/the-energy-future/scenarios/a-better-life-with-a-healthy-planet/_jcr_content/par/tabbedcontent/tab/textimage.stream/1475857466913/a1aa5660d50ab79942f7e4a629fcb37ab93d021afb308b92c1b77696ce6b2ba6/scenarios-nze-brochure-interactive-afwv9-interactive.pdf. However, in the report, Shell admits that “we have no immediate plans to move to a net-zero emissions portfolio over our investment horizon of 10–20 years.” *Id.* at 1.

187. Despite continuing to utilize scenarios as a business mechanism to adapt and prepare for momentous events such as climate change, as well as the risks brought on by those events—including, but not limited to, extreme weather conditions, torrential flooding, and impacts to coastal communities—Shell has failed to disclose or integrate sea level rise, increased and/or more intense precipitation, increased magnitude and frequency of storm events, and increased magnitude and frequency of storm surges—all of which will become, and are becoming, worse as a result of climate change—in the design, operation, and management of the Providence Terminal.

188. Included among Shell’s list of environmental standards is “preventing spills and leaks of hazardous materials.” Shell Global, *Our Approach*, <http://www.shell.com/sustainability/environment/our-approach-sustainability.html> (last visited Aug. 27, 2017). Shell states that “[t]o avoid spills and leaks of hazardous substances, we work hard to make sure our facilities are well designed, safely operated and appropriately inspected and maintained.” *Id.*

189. Contrary to these statements, Shell is not preventing spills and leaks of hazardous materials because Shell has failed to disclose or integrate sea level rise, increased and/or more intense

precipitation, increased magnitude and frequency of storm events, and increased magnitude and frequency of storm surges—all of which will become, and are becoming, worse as a result of climate change—in the design, operation, and management of the Providence Terminal.

190. Shell claims to operate under a “Commitment and Policy on Health, Security, Safety, the Environment and Social Performance.” This standard commits Shell to the following:

Pursue the goal of no harm to people; [p]rotect the environment; [u]se material and energy efficiently to provide our products and services; [r]espect our neighbours and contribute to the societies in which we operate; [d]evelop energy resources, products and services consistent with these aims; [p]ublicly report on our performance; [p]lay a leading role in promoting best practice in our industries; [m]anage HSSE & SP matters as any other critical business activity; and [p]romote a culture in which all Shell employees share this commitment.

Shell Global, *HSSE and Social Performance – Commitment and Policy*,

<http://www.shell.com/sustainability/our-approach/commitments-policies-and-standards/hsse-and-social-performance.html> (last visited Aug. 15, 2017).

191. These principles are reiterated in Shell Global, *Our Approach*, <http://www.shell.com/sustainability/environment/our-approach-sustainability.html> (last visited Aug. 15, 2017), wherein Shell claims to take the following approach to the environment: “[w]e are committed to protect the environment, respect our neighbours, cause no harm to people, and help the world move towards a lower-carbon future,” and “[b]eing responsible means understanding the impact Shell can have on the environment and the communities we share it with – before, during and at the end of our operations. We always try to make a positive contribution to the local environments in which we operate and seek to reduce any potential negative impacts.” “For Shell, responsible means respecting national laws and international standards, matching or exceeding

global best practice and setting our own rigorous performance standards. Our core values of honesty, integrity and respect for people underpin our decisions and actions.” *Id.*

192. Shell has not fulfilled these commitments because Shell has failed to disclose or integrate sea level rise, increased and/or more intense precipitation, increased magnitude and frequency of storm events, and increased magnitude and frequency of storm surges—all of which will become, and are becoming, worse as a result of climate change—in the design, operation, and management of the Providence Terminal, placing communities and the environment at risk.

193. In discussing “Adaptation” to climate change in its 2016 Sustainability Report, Shell stated:

[t]he effects of climate change mean that governments, businesses and local communities are adapting their infrastructure to the changing environment. At Shell, we are taking steps at our facilities around the world to ensure that they are resilient to climate change. This reduces the vulnerability of our facilities and infrastructure to potential extreme variability in weather conditions.

We take different approaches to adaptation for existing facilities and new projects. We progressively adjust our design standards for new projects while, for existing assets, we identify those that are most vulnerable to climate change and take appropriate action.

Royal Dutch Shell plc, *Sustainability Report*, at 19 (2016),

https://www.unglobalcompact.org/system/attachments/cop_2017/375091/original/entire_shell_sr16.pdf?1491999994. The report further states that “Shell has a rigorous approach to understanding, managing and mitigating climate risks in our facilities.” *Id.*

194. Engineers working in the oil and gas industry and other major infrastructure projects along the coastal United States customarily take climate change impacts into account throughout their planning, decision-making, and project construction and design processes.

195. Engineers exercising skill and judgment reasonably expected of similarly situated professionals make planning and design decisions based on information regarding climate change-induced impacts.

196. For example, the Army Corps of Engineers issued a regulation in 2013 entitled “Incorporating Sea Level Change in Civil Works Programs.” That regulation states that

[sea level change] can cause a number of impacts in coastal and estuarine zones, including changes in shoreline erosion, inundation or exposure of low-lying coastal areas, changes in storm and flood damages, shifts in extent and distribution of wetlands and other coastal habitats, changes to groundwater levels, and alterations to salinity intrusion into estuaries and groundwater systems.

Department of the Army, Army Corps of Engineers, Regulation No. 1100-2-8162 at Appendix B,

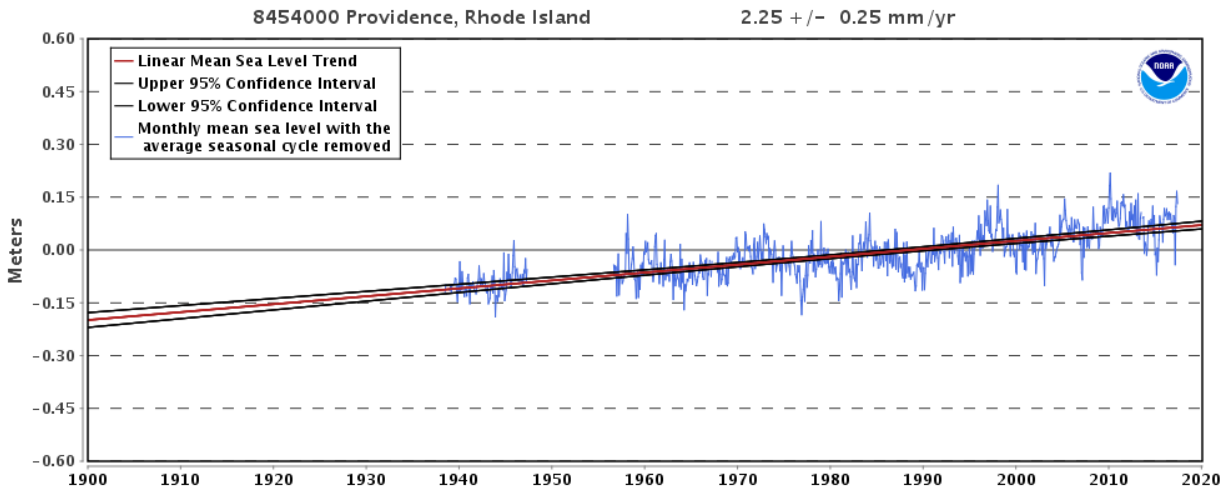
B-1 (Dec. 31, 2013) (citation omitted),

http://www.publications.usace.army.mil/Portals/76/Publications/EngineerRegulations/ER_1100-2-8162.pdf.

197. The Army Corps acknowledges that sea level change is likely to impact coastal projects, and “[a]s a result, managing, planning, engineering, designing, operating, and maintaining for [sea level change] must consider how sensitive and adaptable 1) natural and managed ecosystems and 2) human and engineered systems are to climate change and other related global changes.” *Id.* at 2.

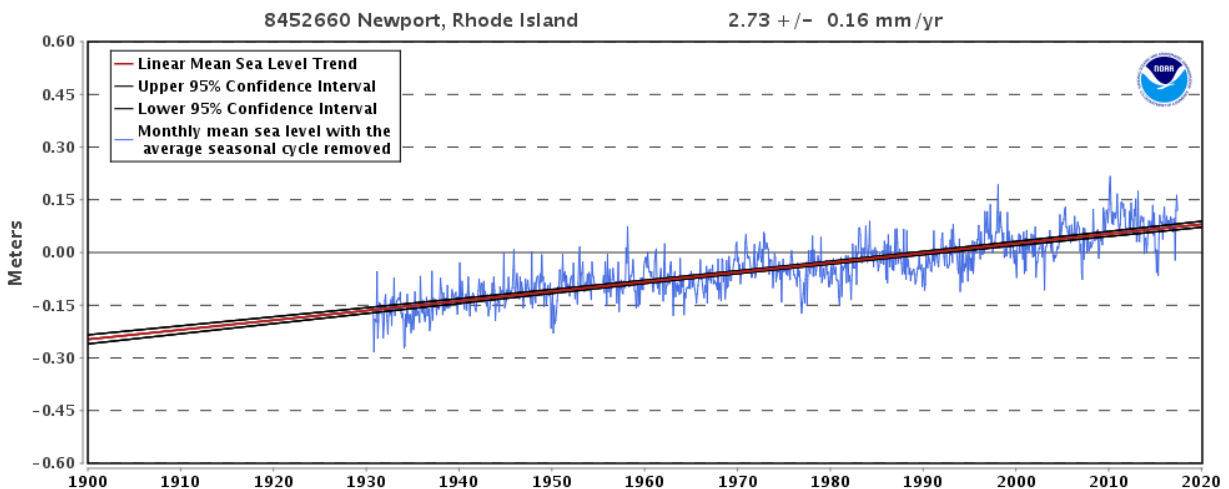
198. The Army Corps’ regulation also states that “[h]istoric trends in local MSL [mean sea level] are best determined from tide gauge records. The NOAA Center for Operational Oceanographic Products and Services (CO-OPS) provides historic information and local MSL trends for tidal stations operated by NOAA/NOS in the US.” *Id.* at Appendix B, B-2 (citation omitted).

199. The historic rate of relative sea level change at relevant local tide stations (as shown in the graphs below for the Providence and Newport Tide Gauges) should be used as the low rate for analysis, because it is a linear extrapolation from historic tide gauge measurements and does not account for future acceleration of sea level rise, ice sheet melt, or sea level rise due to warmer water occupying a greater volume.



NOAA, *Mean Sea Level Trend Measured at the Providence Tide Gauge, 8454000* TIDES & CURRENTS,

https://tidesandcurrents.noaa.gov/sltrends/sltrends_station.shtml?stnid=8454000 (last visited Aug. 17, 2017).



NOAA, *Mean Sea Level Trend Measured at the Newport Tide Gauge, 8452660*, TIDES & CURRENTS, https://tidesandcurrents.noaa.gov/sltrends/sltrends_station.shtml?stnid=8452660

(last visited Aug. 15, 2017).

200. Shell has not addressed the threats posed by climate change to its Providence Terminal, placing surrounding communities and ecosystems at risk of catastrophic discharges caused by sea level rise, increased and/or more intense precipitation, increased magnitude and frequency of storm events, and increased magnitude and frequency of storm surges—all of which will become, and are becoming, worse as a result of climate change.

201. Shell’s knowing disregard of the imminent risks of sea level rise, increased and/or more intense precipitation, increased magnitude and frequency of storm events, and increased magnitude and frequency of storm surges—all of which will become, and are becoming, worse as a result of climate change that threaten the Providence Terminal and its continuing failure to fortify the Providence Terminal against such known risks makes Shell liable for violations of the CWA, as described below.

CLAIMS FOR RELIEF

First Cause of Action

Violation of the Clean Water Act – Unlawful Certification of SWPPP

202. Plaintiff incorporates the allegations contained in the above paragraphs as though fully set forth herein.

203. The Permit requires that “[t]he SWPPP shall be signed by the permittee in accordance with RIPDES Rule 12 . . .” Permit Part I.C.2, at 12.

204. RIPDES Rule 12 requires that for corporations, “[a]ll permit applications shall be signed . . . by a responsible corporate officer.” R.I. Code R. 25-16-14:12(a). Further,

For the purpose of this section, a responsible corporate officer means: (i) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or (ii) The manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

Id.

205. Similarly, the federal regulations for NPDES permits found at 40 C.F.R. § 122.22 require that a permit application submitted by a corporation be signed by a responsible corporate officer.

40 C.F.R. § 122.22(a)(1). Further,

[f]or the purposes of this section, a responsible corporate officer means: (i) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure *long term environmental compliance* with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

Id. (emphasis added). 40 C.F.R. § 122.22(a)(1) also notes that:

EPA does not require specific assignments or delegations of authority to responsible corporate officers identified in § 122.22(a)(1)(i). The Agency will presume that these responsible corporate officers have the requisite authority to sign permit applications unless the corporation has notified the Director to the contrary. Corporate procedures governing authority to sign permit applications may provide for assignment or delegation to applicable corporate positions under § 122.22(a)(1)(ii) rather than to specific individuals.

206. Both R.I. Code R. 25-16-14:12(d) and the federal regulations at 40 C.F.R. § 122.22(a)(1) require Shell to submit the following certification:

I certify under penalty of law that this document and all attachments were prepared under the direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

207. Shell signed and submitted the required certification at the time of submittal of its RIPDES permit applications.

208. Shell signed and submitted the required certification at the time of development and submission of its SWPPP.

209. Shell signed these certifications without disclosing information in its possession that was relied on by the company in its business decision-making regarding climate change-induced factors such as sea level rise, increased and/or more intense precipitation, increased magnitude and frequency of storm events, and increased magnitude and frequency of storm surge—all of which will become, and are becoming, worse as a result of climate change.

210. Shell signed these certifications without developing and implementing a SWPPP based on information in its possession that was relied on by the company in its business decision-making regarding factors such as sea level rise, increased and/or more intense precipitation, increased magnitude and frequency of storm events, and increased magnitude and frequency of storm surge—all of which will become, and are becoming, worse as a result of climate change.

211. Shell signed these certifications without addressing spill prevention and control procedures based on information in its possession that was relied on by the company in its business decision-

making, regarding factors such as sea level rise, increased and/or more intense precipitation, increased magnitude and frequency of storm events, and increased magnitude and frequency of storm surge—all of which will become, and are becoming, worse as a result of climate change.

212. Shell's failure to disclose and consider climate changed-induced factors such as sea level rise, increased and/or more intense precipitation, increased magnitude and frequency of storm events, and increased magnitude and frequency of storm surge—all of which will become, and are becoming, worse as a result of climate change—renders its SWPPP certification untrue, inaccurate, and incomplete, and therefore unlawful under RIPDES Rule 12 and 40 C.F.R. § 122.22.

213. Shell's failure to prepare the SWPPP in accordance with the requirements identified in RIPDES Rule 12 and 40 C.F.R. § 122.22, with which Shell certified compliance, is a violation of the Permit and the Clean Water Act.

Second Cause of Action

Violation of the Clean Water Act – Failure to Prepare SWPPP in Accordance with Good Engineering Practices

214. Plaintiff incorporates the allegations contained in the above paragraphs as though fully set forth herein.

215. The Permit requires that: "The SWPPP shall be prepared in accordance with good engineering practices . . ." Permit Part I.C.1, at 12.

216. Shell's SWPPP for the Providence Terminal was not prepared in accordance with good engineering practices because the SWPPP was not based on information consistent with the duty of care applicable to engineers.

217. The SWPPP was not prepared based on information known to reasonably prudent engineers, such as information about sea level rise, increased and/or more intense precipitation,

increased magnitude and frequency of storm events, and increased magnitude and frequency of storm surge—all of which will become, and are becoming, worse as a result of climate change.

218. The SWPPP was not prepared based on information known to Shell, such as information about sea level rise, increased and/or more intense precipitation, increased magnitude and frequency of storm events, and increased magnitude and frequency of storm surge—all of which will become, and are becoming, worse as a result of climate change. *See supra*, ¶¶ 151-201.

219. For these reasons, Shell has failed to prepare a SWPPP in accordance with good engineering practices, in violation of the Permit and the Clean Water Act.

Third Cause of Action

Violation of the Clean Water Act – Failure to Identify Sources of Pollution

220. Plaintiff incorporates the allegations contained in the above paragraphs as though fully set forth herein.

221. The Permit requires that: “The SWPPP shall . . . identify potential sources of pollutants, which may reasonably be expected to affect the quality of storm water discharges associated with industrial activity from the facility.” Permit Part I.C.1, at 12.

222. Shell has failed to identify sources of pollutants resulting from sea level rise, increased and/or more intense precipitation, increased magnitude and frequency of storm events, and increased magnitude and frequency of storm surge—all of which will become, and are becoming, worse as a result of climate change—that are reasonably expected and anticipated by Shell to affect the quality of the stormwater discharges from the Providence Terminal.

223. The Permit further requires that:

[t]he SWPPP must provide a description of potential sources which may be reasonably expected to add significant amounts of pollutants to storm water discharges or which may result in the discharge of pollutants during dry weather from separate storm sewers draining

the facility. It must identify all activities and significant materials, which may potentially be significant pollutant sources.

Permit Part I.C.5.a, at 12.

224. The SWPPP does not address sources of pollutants resulting from sea level rise, increased and/or more intense precipitation, increased magnitude and frequency of storms events, and increased magnitude and frequency of storm surge—all of which will become, and are becoming, worse as a result of climate change—which may be reasonably expected to add significant amounts of pollutants to storm water discharges or which may result in the discharge of pollutants during dry weather from separate storm sewers draining the facility.

225. The SWPPP fails to identify all activities and significant materials, which may potentially be significant pollutant sources due to sea level rise, increased and/or more intense precipitation, increased magnitude and frequency of storms events, and increased magnitude and frequency of storm surge—all of which will become, and are becoming, worse as a result of climate change, and are known to Shell.

226. For these reasons, Shell's SWPPP fails to comply with the requirements of the Permit, in violation of the Permit and the Clean Water Act.

Fourth Cause of Action

Violation of the Clean Water Act – Failure to Describe and Implement Practices to Reduce Pollutants and Ensure Permit Compliance

227. Plaintiff incorporates the allegations contained in the above paragraphs as though fully set forth herein.

228. The Permit requires that:

the SWPPP shall describe and ensure implementation of Best Management Practices (BMPs) which are to be used to reduce or eliminate the pollutants in storm water discharges associated with

industrial activity at the facility and to assure compliance with the terms and conditions of this permit.

Permit Part I.C.1, at 12.

229. The SWPPP for the Providence Terminal fails to describe or ensure implementation of BMPs that will be used to address pollutant discharges resulting from sea level rise, increased and/or more intense precipitation, increased magnitude and frequency of storm events, and increased magnitude and frequency of storm surge—all of which will become, and are becoming, worse as a result of climate change—in violation of the Permit and the Clean Water Act.

230. Shell has failed to properly maintain its stormwater treatment system in violation of the Permit and the Clean Water Act.

Fifth Cause of Action

Violation of the Clean Water Act – Failure to Address Adequacy of Containment of Leaks and Spills in Storage and Truck Loading Areas

231. Plaintiff incorporates the allegations contained in the above paragraphs as though fully set forth herein.

232. The Permit requires that:

[t]he SWPPP in Part I.C. shall specifically address the adequacy of containment of leaks and spills in storage areas (from Drums, Additive Tanks, Petroleum Product Tanks, etc.) and truck loading area(s). Adequate containment must exist at these locations so as to prevent untreated discharges from reaching any surface water.

Permit Part I.B.5, at 11.

233. The SWPPP contains a section entitled “Spill Prevention and Response Procedures.” SWPPP at 4-2 – 4-3.

234. However, Shell has failed to design and implement containment systems adequate to prevent discharges resulting from sea level rise, increased and/or more intense precipitation,

increased magnitude and frequency of storm events, and increased magnitude and frequency of storm surge—all of which will become, and are becoming, worse as a result of climate change, in violation of the Permit and the Clean Water Act.

Sixth Cause of Action

Violation of the Clean Water Act – Failure to Amend or Update the SWPPP

235. Plaintiff incorporates the allegations contained in the above paragraphs as though fully set forth herein.

236. The Permit requires that:

[t]he permittee shall immediately amend the SWPPP whenever there is a change in design, construction, operation, or maintenance, which has a significant effect of [sic] the potential for the discharge of pollutants to the waters of the State; a release of reportable quantities of hazardous substances and oil; or if the SWPPP proves to be ineffective in achieving the general objectives of controlling pollutants in storm water discharges associated with industrial activity. Changes must be noted and then submitted to DEM. Amendments to the SWPPP may be reviewed by DEM in the same manner as Part I.C.3. of this permit.

Permit Part I.C.4, at 12.

237. Shell has not amended or updated its SWPPP based on information in its possession regarding sea level rise, increased and/or more intense precipitation, increased magnitude and frequency of storm events, and increased magnitude and frequency of storm surge—all of which will become, and are becoming, worse as a result of climate change—in violation of the Permit and the Clean Water Act.

238. For these reasons, Shell has failed to properly amend or update its SWPPP, in violation of the Permit and the Clean Water Act.

Seventh Cause of Action

Violation of the Clean Water Act – Failure to Properly Operate and Maintain Facilities and Systems of Treatment and Control

239. Plaintiff incorporates the allegations contained in the above paragraphs as though fully set forth herein.

240. The Permit requires that “[t]he permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit.” Permit Part II.e, at 3. “Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures . . .” *Id.* The Permit provision “requires the operation of back-up or auxiliary facilities or similar systems only when the operation is necessary to achieve compliance with the conditions of the permit.” *Id.*; *see also* 40 C.F.R. § 122.41(e).

241. The Permit’s SWPPP requirements also include preventative maintenance protocols involving “inspection and maintenance of storm water management devices (i.e., oil/water separators, catch basins) as well as inspecting and testing plant equipment and systems to uncover conditions that could cause breakdown or failures resulting in discharges of pollutants to surface waters.” Permit Part I.C.5.b.3, at 14.

242. Shell is not properly operating and maintaining the Providence Terminal because Shell has failed to consider and act upon information regarding sea level rise, increased and/or more intense precipitation, increased magnitude and frequency of storm events, and increased magnitude and frequency of storm surge—all of which will become, and are becoming, worse as a result of climate change.

243. Shell’s failure to properly operate and maintain the Providence Terminal violates the Permit and the Clean Water Act.

Eighth Cause of Action

Violation of the Clean Water Act – Failure to Clean Oil/Water Separators and Storm Water Ponds

244. Plaintiff incorporates the allegations contained in the above paragraphs as though fully set forth herein.

245. The SWPPP states that “[t]he oil/water separators are is [sic] inspected quarterly for both sludge layer and oil layer and cleaned-out as appropriate” and that “[t]he storm water collection ponds are also inspected quarterly for excessive sediment build-up or evidence of erosion, and corrective action taken as needed.” SWPPP, at 4-4.

246. The separator and ponds are routinely dirty, and show no signs of regular cleaning or maintenance. Examples of this are attached at Exhibits B and C.

247. Failure to clean out the separators and ponds and/or take corrective action is a violation of Shell’s duty to maintain and implement the SWPPP. *See* Permit Part I.C.1, at 12; SWPPP, at i.

248. Shell’s failure to comply with its duties under the SWPPP is a violation of the Permit and the Clean Water Act.

Ninth Cause of Action

Violation of the Clean Water Act – Failure to Submit Required Facts or Information to Rhode Island Department of Environmental Management

249. Plaintiff incorporates the allegations contained in the above paragraphs as though fully set forth herein.

250. The Permit requires that: “[w]here the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, they shall promptly submit such facts or information.” Permit Part II.1.7, at 6.

251. Shell has failed to submit relevant facts and/or submitted incorrect information regarding sea level rise, increased and/or more intense precipitation, increased magnitude and frequency of storm events, and increased magnitude and frequency of storm surge—all of which will become, and are becoming, worse as a result of climate change—in its permit application and in reports to DEM.

252. Shell has not promptly submitted such facts or information to DEM, despite Shell's knowledge of sea level rise, increased and/or more intense precipitation, increased magnitude and frequency of storm events, and increased magnitude and frequency of storm surge—all of which will become, and are becoming, worse as a result of climate change.

253. By failing to submit relevant facts and/or submitting incorrect information, and failing to promptly submit such information upon becoming aware that it had not previously been submitted, Shell is violating the Permit and the Clean Water Act.

Tenth Cause of Action

Violations of the Clean Water Act – Duty to Mitigate

254. Plaintiff incorporates the allegations contained in the above paragraphs as though fully set forth herein.

255. The Permit requires that: “[t]he permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.” Permit Part II.d, at 2; *see also* 40 C.F.R. § 122.41(d).

256. Shell has failed take all reasonable steps to minimize or prevent any discharge in violation of the Permit which has a reasonable likelihood of adversely affecting human health or the environment due to its failure to consider and act upon information regarding sea level rise, increased and/or more intense precipitation, increased magnitude and frequency of storm events,

and increased magnitude and frequency of storm surge—all of which will become, and are becoming, worse as a result of climate change, and are known to Shell.

257. Shell's failure to take all reasonable steps to minimize or prevent any discharge which has a reasonable likelihood of adversely affecting human health or the environment is a violation of the Permit and the Clean Water Act.

Eleventh Cause of Action

Violations of the Clean Water Act – Unpermitted Discharge

258. Plaintiff incorporates the allegations contained in the above paragraphs as though fully set forth herein.

259. The CWA prohibits the discharge of any pollutant into the navigable waters of the United States without a NPDES permit authorizing such discharge. *See* 33 U.S.C. §§ 1311(a), 1342.

260. The Permit authorizes discharge of treated stormwater from three distinct outfalls; however, there is additional runoff occurring from the Providence Terminal that is not authorized by the Permit.

261. During rain events, runoff flows down an embankment located on the Providence Terminal property directly into the Providence River. *See* Exhibit B.

262. The Providence Terminal also discharges stormwater containing pollutants directly into the City of Providence storm drainage system from an area west of Allens Avenue.

263. These discharges are not authorized by the Permit, and thus are unpermitted, in violation of the Permit and the Clean Water Act.

Twelfth Cause of Action

Violations of the Clean Water Act – Failure to Comply with Monitoring and Reporting Requirements due to Failure to Use and Comply with Required Detection Limits

264. Plaintiff incorporates the allegations contained in the above paragraphs as though fully set forth herein.

265. Failure to conduct required monitoring and reporting in compliance with an NPDES Permit is a violation of the CWA.

266. Shell has failed to comply with the monitoring and reporting requirements in its Permit.

267. As summarized in Exhibit D, Shell has often reported on its DMRs that the concentration of pollutants in the samples analyzed was “<1” ug/L. Reporting “<1” ug/L indicates that the MDL Shell is using for the pollutants is one ug/L, and the amount of pollutant in the analyzed samples was below the detection limit of one ug/L.

268. The MDL expressly required in the Permit for total xylenes, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene is not “one” ug/L; it is 0.5, 0.013, 0.023, 0.018, 0.017, 0.15, 0.03, and 0.043 ug/L, respectively, all values below one. For these pollutant parameters, reporting “<1” ug/L is a violation of the Permit.

269. By reporting these pollutants as “<1”, where “1” is orders of magnitude greater than the required monitoring level for these pollutants, Shell has not documented the level of toxicity of its discharge in conformance with the Permit’s requirements.

270. Shell’s inadequate monitoring and reporting provide little to no useful information regarding the quality or characteristics of these pollutant discharges from the facility.

271. Shell has failed to conduct required monitoring for pollutant discharges and failed to comply with reporting requirements, in violations of the Permit and the Clean Water Act.

Thirteenth Cause of Action

Violation of the Clean Water Act – Failure to Comply with Monitoring and Reporting Requirements due to Failure to Comply with Timing Requirements for Sampling

272. Plaintiff incorporates the allegations contained in the above paragraphs as though fully set forth herein.

273. The Permit requires the following regarding sampling for “oil and grease” and “TSS:”

[t]wo (2) samples shall be taken during wet weather and one (1) during dry weather. Wet weather samples must be collected during the first 30 minutes from discharges resulting from a storm event that is greater than 0.1 inch of rainfall in a 24-hour period and at least 72 hours from the previously measurable (greater than 0.1 inch of rainfall in a 24-hour period) storm event. If this is not feasible, wet weather samples may be taken within the first hour of discharge and noted on the Discharge Monitoring Report.

Permit Part I.A.1 n. 1, at 4.

274. As summarized in Exhibit E, the DMRs for the Providence Terminal regularly indicate that samples were not taken in compliance with this Permit requirement.

275. For monitored pollutants other than “oil and grease” and “TSS,” the Permit requires that:

[o]ne sample shall be taken during the first 30 minutes of discharge from a storm event that is greater than 0.1 inch of rainfall in a 24-hour period and at least 72 hours from the previously measurable (greater than 0.1 inch of rainfall in a 24-hour period) storm event; if this is not feasible, it may be taken within the first hour of discharge and noted on the Discharge Monitoring Report.

Permit Part I.A.1 n. 2, at 4.

276. As summarized in Exhibit F, the DMRs for the Providence Terminal regularly indicate that samples were not taken in compliance with this Permit requirement.

277. Shell’s failure to take samples in compliance with the Permit’s timing requirements is a violation of the Permit and the Clean Water Act.

Fourteenth Cause of Action

Violation of the Clean Water Act – Failure to Comply with Monitoring and Reporting Requirements due to Failure to Provide Required Information

278. Plaintiff incorporates the allegations contained in the above paragraphs as though fully set forth herein.

279. For all pollutant monitoring, Shell is required to document specific storm characteristics on the DMRs. Specifically, the Permit requires that:

[i]n addition to the required sampling results submitted in accordance with Parts I.A.1. and I.A.3. of this permit, the permittee must provide the date and duration (hours) of the storm event sampled, the total depth of rainfall (inches), and the total volume of runoff (Ft³). This information must be submitted with the Discharge Monitoring Report forms at the frequency specified in Part I.E.2 of this permit.

Permit Part I.A.4.d, at 8.

280. As summarized in Exhibit G, the DMRs for the Providence Terminal indicate that the information required under this Permit provision was not recorded and/or provided.

281. Shell's failure to provide required information in conjunction with its sampling activities is a violation of the Permit and the Clean Water Act.

Fifteenth Cause of Action

Violation of the Clean Water Act – Failure to Comply with Monitoring and Reporting Requirements due to Abuse of Waiver Provision

282. Plaintiff incorporates the allegations contained in the above paragraphs as though fully set forth herein.

283. For all pollutant monitoring, if adverse climatic conditions prevent samples from being collected in a given period, Shell is required to submit an explanation as to why, and may only exercise this waiver once in a two-year period. Specifically, the Permit requires that:

[i]f the permittee is unable to collect samples due to adverse climatic conditions which make the collections of samples dangerous or impractical, the permittee must submit, in lieu of sampling data, a description of why samples could not be collected, including available precipitation data for the monitoring period. The permittee can only exercise this waiver once in a two (2) year period for outfalls designated 001A, 002A, and 003A.

Permit Part I.A.4.e, at 8.

284. As summarized in Exhibit H, the DMRs for the Providence Terminal indicate that Shell is over-utilizing this waiver requirement, in violation of the Permit's prohibition on using the waiver more than once in a two-year period.

285. Shell's abuse of the limited waiver provision in conjunction with its sampling activities is a violation of the Permit and the Clean Water Act.

Sixteenth Cause of Action

Violation of the Clean Water Act – Failure to Comply with Sampling Requirements

286. Plaintiff incorporates the allegations contained in the above paragraphs as though fully set forth herein.

287. The Permit includes a condition entitled "Recordkeeping and Internal Reporting Procedures" that states:

[i]ncidents such as spills, or other discharges, along with *other information describing the quality and quantity of storm water discharges* must be included in the records. All inspections and maintenance activities must be documented and maintained on site for at least five (5) years.

Permit Part I.C.5.b.11, at 16 (emphasis added).

288. Because all discharges through Outfall 001A and some discharges through Outfall 002A are pump controlled, *see* Statement of Basis IV, at 3, Shell must take samples at those locations

within the first 30 minutes of discharge associated with pumping and keep records of all pump operations to be in compliance with the Permit, *see* Permit Part I.A.1 n. 1, 2, at 4.

289. The DMRs do not indicate that monitoring is occurring during pumped discharges at all, let alone during the first 30 minutes after the pumps are activated.

290. Shell's failure to sample at all pump-controlled locations within the first 30 minutes of discharge associated with pumping and failure to keep records of all pump operations is a violation of the Permit and the Clean Water Act.

Seventeenth Cause of Action

Violations of the Clean Water Act – Violations of State Water Quality Standards

291. Plaintiff incorporates the allegations contained in the above paragraphs as though fully set forth herein.

292. The Permit states: “[d]ischarges which cause a violation of water quality standards are prohibited.” Permit Part II.o, at 7.

293. The State water quality standards for benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene are well below “1” ug/L. *See* R.I. Code R. 25-16-25, Appendix B, Table 1 (DEM Ambient Water Quality Criteria and Guidelines).

294. Upon information and belief, Shell is violating State water quality standards, at a minimum, on the days in which Shell has reported “<1” ug/L for the parameters listed above. *See supra*, ¶ 267.

295. Each and every violation of State water quality standards is a violation of the Permit and the Clean Water At.

Eighteenth Cause of Action

Violation of the Clean Water Act – Violation of Permit Prohibition on Visible Oil Sheen, Foam, or Floating Solids

296. Plaintiff incorporates the allegations contained in the above paragraphs as though fully set forth herein.

297. The Permit states: “the effluent shall contain neither a visible oil sheen, foam, nor floating solids at any time” and “[t]he discharge shall not cause visible discoloration of receiving waters.” Permit Part I.A.4.c & I.A.4.b, at 8.

298. State water quality standards prohibit any “sludge deposits, solid refuse, floating solids, oil, grease, scum” in Class SB1 {a} waterbodies, including the relevant portion of the Providence River. R.I. Code R. 25-16-25:8, Table 2.8.D.(3).

299. There have been past and ongoing discharges associated with the Providence Terminal that result in a visible oil sheen at the Providence Terminal outfalls and in the Providence River.

300. A 2012 Emergency Response Report, filed with the DEM Division of Compliance and Inspection, stated that “oil has been coming out into the Providence River [near one of the outfalls].” State of Rhode Island and Providence Plantations Department of Environmental Management, *Emergency Response Report*, by DEM Investigator Jill Eastman (Feb. 23, 2012). *See also supra*, ¶ 110.

301. Each and every discharge of oil sheen into the Providence River is a violation of State water quality standards, the Permit, and the Clean Water Act.

Nineteenth Cause of Action

Violation of the Clean Water Act – Failure to Properly Operate and Maintain Wastewater Collection and Treatment System

302. Plaintiff incorporates the allegations contained in the above paragraphs as though fully set forth herein.

303. The Permit requires that “[t]he wastewater collection and treatment system shall be operated and maintained in order to provide optimal treatment of the wastewaters prior to discharge to the receiving water.” Permit Part I.B.4, at 11.

304. The current condition of the Providence Terminal wastewater collection and treatment system does not comply with this provision of the Permit.

305. The Providence Terminal outfall pipes, which discharge directly into the Providence River, are in disrepair.

306. Failure to properly operate and maintain the wastewater collection and treatment system is a violation of the Permit and the Clean Water Act.

RELIEF REQUESTED

307. Wherefore, Plaintiff respectfully requests that this Court grant the following relief:

- a. declaratory and injunctive relief to prevent further violations of the Clean Water Act pursuant to §§ 505(a) and (d) of the CWA, 33 U.S.C. §§ 1365(a) and (d);
- b. civil penalties of up to \$37,500 per day per day per violation for all Clean Water Act violations occurring between January 12, 2009 and November 2, 2015; up to \$51,570 per day per violation for all Clean Water Act violations occurring after November 2, 2015 and assessed on or after August 1, 2016 but before January 15, 2017; and up to \$52,414 per day per violation for all Clean Water Act violations occurring after November 2, 2015 and assessed on or after January 15, 2017, pursuant to § 309(d) of the CWA, 33 U.S.C. § 1319(d), and the regulations governing the Adjustment of Civil Monetary Penalties for Inflation, 40 C.F.R. §§ 19.1–19.4;

- c. environmental restoration and compensatory mitigation to address the impacts of past violations of the Permit;
- d. an award of the costs of litigation, including reasonable attorney and expert witness fees, under § 505(d) of the CWA, 33 U.S.C. § 1365(d); and
- e. all other relief as permitted by law.

JURY DEMAND

Plaintiff requests a jury trial on the issue of liability and any other issue cognizable by a Jury.

Respectfully submitted,

Dated: August 28, 2017

CONSERVATION LAW FOUNDATION, INC.

By its attorneys:

/s/ Amy E. Moses

Amy E. Moses, Esq.

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**Motions for Pro Hac Vice Admission To Be
Filed*